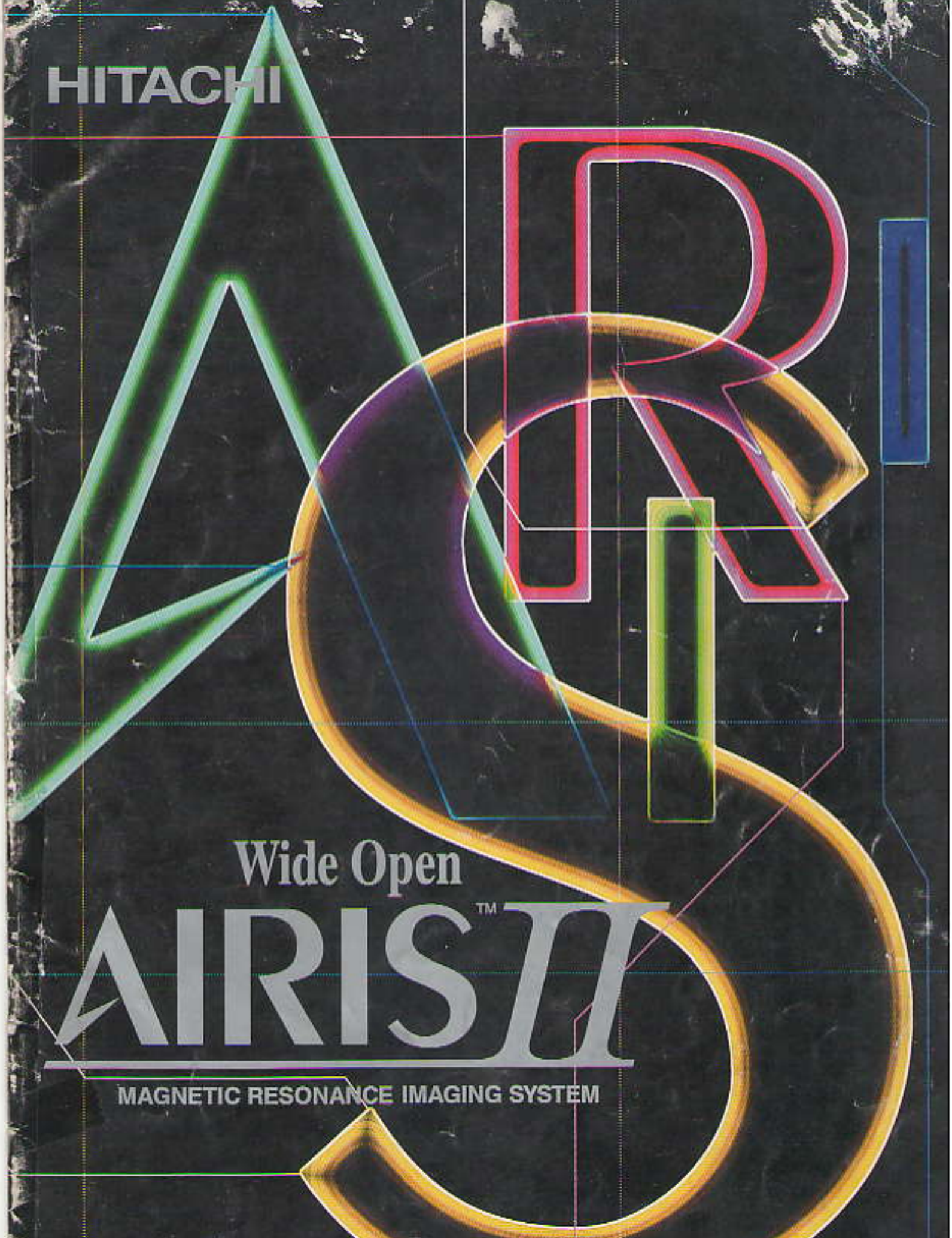
HITACHI



Wide Open

AIRIS™ II

MAGNETIC RESONANCE IMAGING SYSTEM

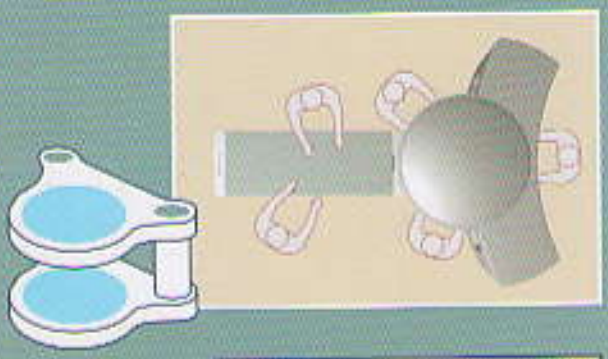
AIRIS™ II

AIRIS II offers you
a premium mix of form, functionality
and performance
that are patient- and user-friendly
beyond comparison.
It's BECAUSE WE CARE.


HITACHI

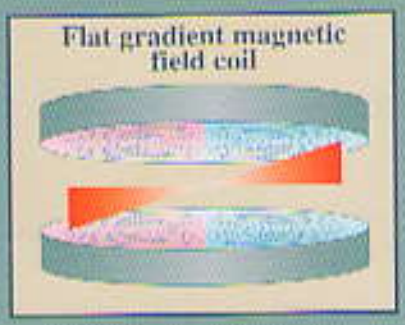
Open Technology

Ingenious open gantry design has been realized by most advanced technologies. design has been realized by most advanced technologies.



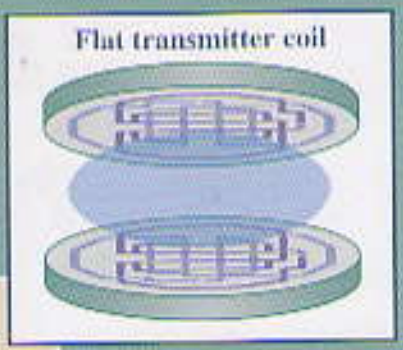
Open magnet circuit with two supporting columns

The gantry structure supporting the upper and lower magnets has been improved by adopting two columns in the back instead of four columns, allowing the system to provide wide open spaces of 210˚ in the front and 70˚ in the back. Needless to say, a high homogeneity of magnetic field is achieved by the optimized shimming technology. This most advanced gantry of AIRIS II *has been realized only by Hitachi's unique technologies.*



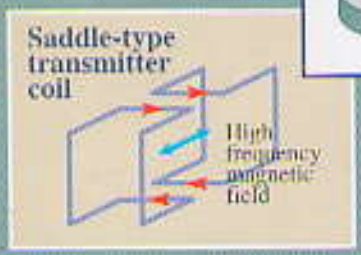
Flat gradient magnetic field coil

The gradient magnetic field coils are required to produce magnetic field gradients in X, Y and Z-axes in the static magnetic field space. The gradient field coils used in AIRIS II *are of flat type that has been developed by applying computer simulation to form a gradient magnetic field accurately with a high degree of efficiency. Because there are no resonating parts in its structure, the gradient field coils are incredibly quiet and patient friendly.*



Flat transmitter coil

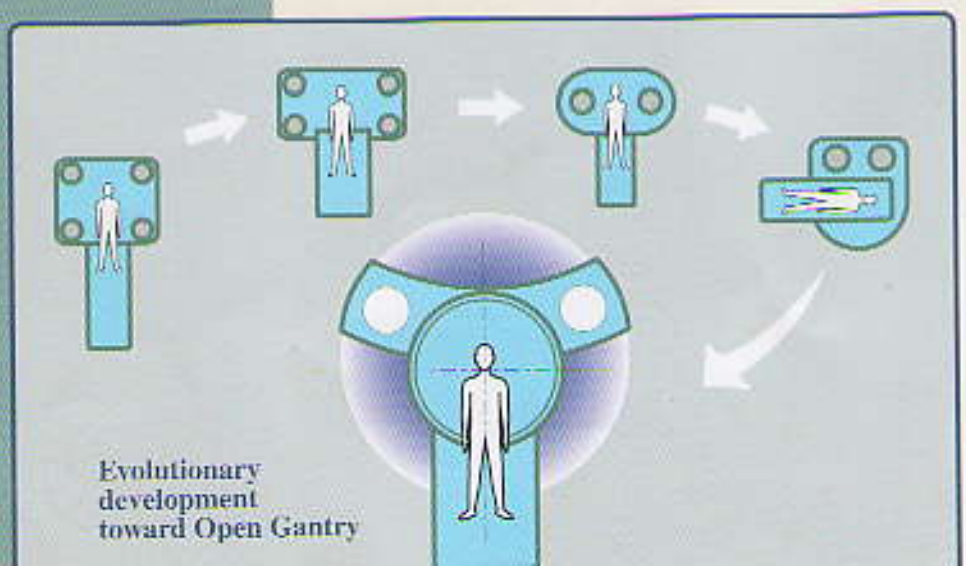
Development of flat-type transmitter coil is essential to realize a full-open gantry. It is necessary in the vertical field MRI system to produce horizontal high frequency magnetic field as transmitting pulse. The saddle type transmitter coil has been previously used, with which return lines exist between the upper and lower magnets, preventing the gantry to be structured as open type. Hitachi has solved this problem by developing the flat-type transmitter coil consisting of completely separated top and bottom parts. Furthermore, adoption of QD transmitter system has contributed to improvement in high uniformity and high efficiency.



Control panel

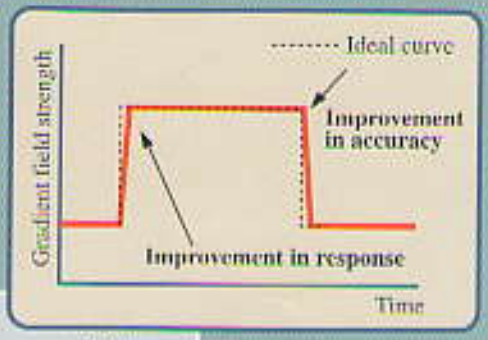
Scan operation can be started from any of the three control panels provided at the right, left and rear of the gantry, thus allowing quick examination as well as keeping communication with the patient and convenient contrast-enhanced imaging with a proper timing.

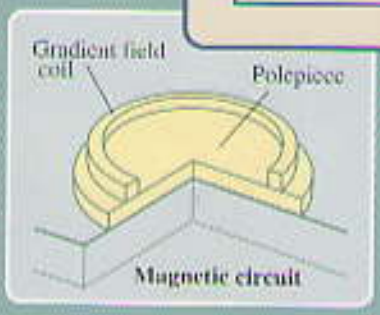
Control panel

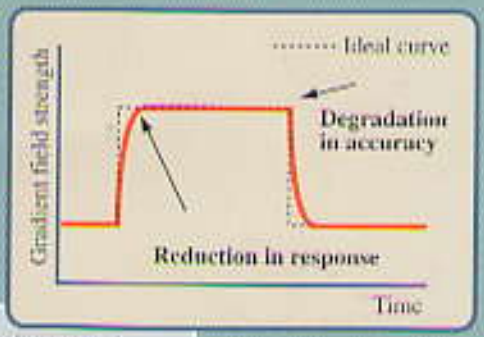


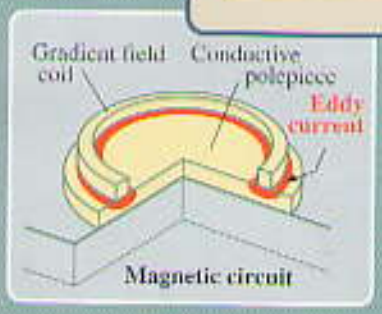
Hardware Technology

Image quality of AIRIS-II is supported by powerful hardware.









High-power gradient field power supply

Performance of the gradient magnetic field is the important basic factor to determine freedom of pulse sequence, scan time and image resolution. The high power gradient field power supply incorporated in AIRISII *features top class gradient field strength of 15mT/m and a slew rate of 30T/m/s. The high power gradient field strength allows thin slice imaging and high resolution imaging, while a high slew rate improves time-efficiency of pulse sequence and contributes to fast imaging.*

High-output RF power amplifier

AIRISII *incorporates RF power amplifier mounted in the rack capable of 5kW total output with very little heat dissipation. Such high power amplifier is essential to realize high performance sequences such as MTC.*

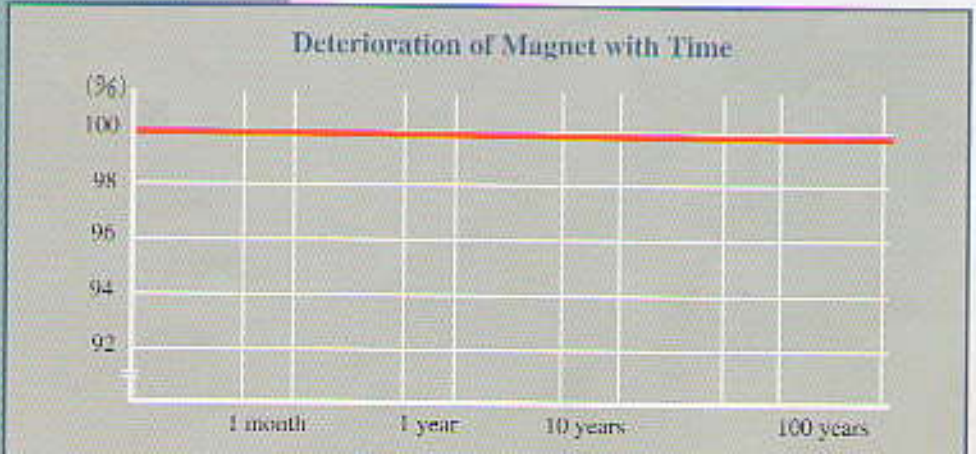
Magnetic circuit with free eddy current

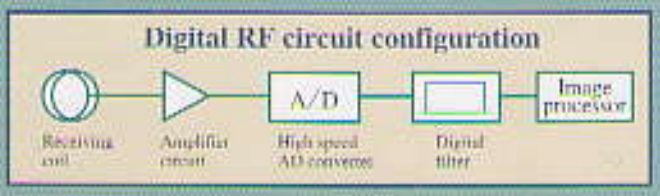
If the polepiece placed at the back side of the gradient field coil is made of conductive material, eddy currents are induced in the direction counteracting the gradient field, resulting in deterioration of response and degrading accuracy. AIRISII *uses the polepiece made of nonconductive material developed to solve this problem basically.*

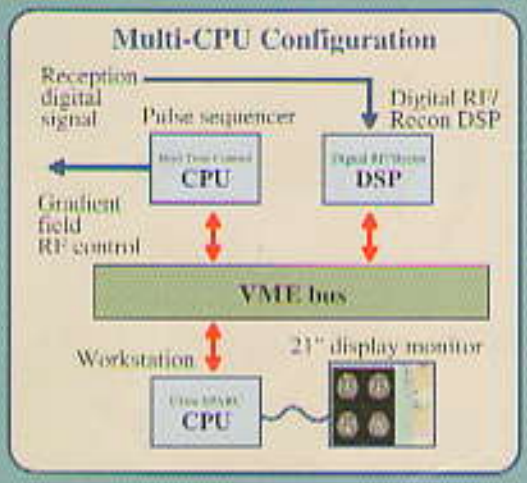
Most powerful magnetic material

The magnet material NEOMAX used in the magnetic circuit features the most powerful coercive force. This magnet material has realized the compact, unique gantry of AIRISII. *This permanent magnet does not require any energy at all to produce the magnetic field.*
Because the gantry incorporates the closed magnetic circuit, its fringe field is extremely small. The highest cost performance and installation economy are the incomparable merits of AIRISII. *Demagnetization of the magnet material NEOMAX with time is negligibly little and its stability is outstanding.*

Note: NEOMAX is the brand name registered by Sumitomo Special Metals Company, Ltd., and the material composed are Nd-B-Fe.







Workstation console

The operator console, a decisive factor in operability, incorporates a high performance, most advanced workstation. GUI (Graphical User Interface) operation with a mouse on a 21" color display allows users to operate the system comfortably.

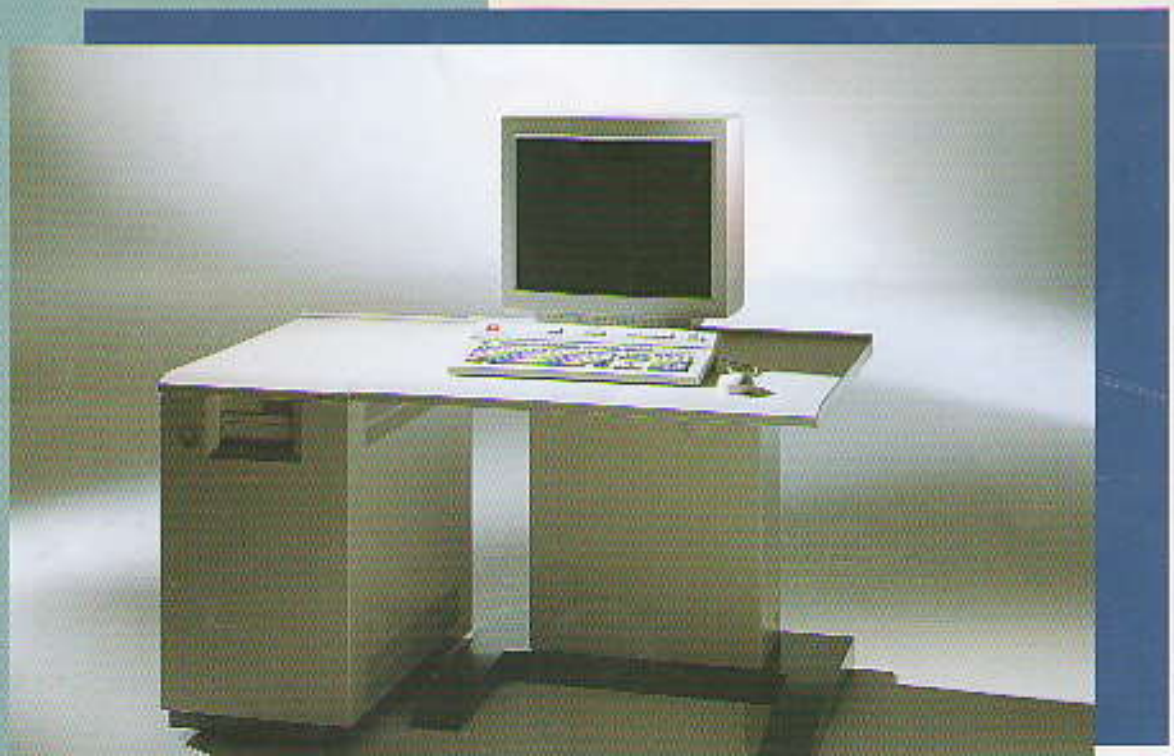
Full-digital RF circuit

The performance of the RF circuit to process reception signals has a significant effect on image quality. AIRIS II is equipped with a newly developed full-digital RF circuit to achieve excellent accuracy and reliability.

The full-digital RF circuit incorporating a high speed AD converter digitizes reception signals in the first stage, and analog detection and filtering process which have been suffered from frequent adjustments and change with time can now be handled through data processing by the high speed digital circuits. Thus, filter characteristics can be controlled with a high accuracy.

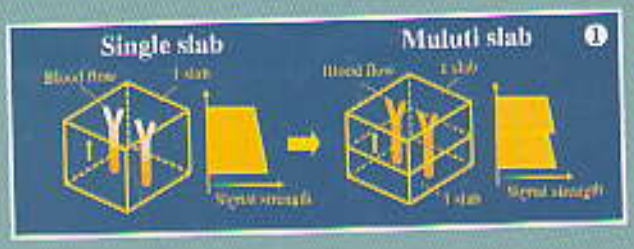
Multi-CPU system

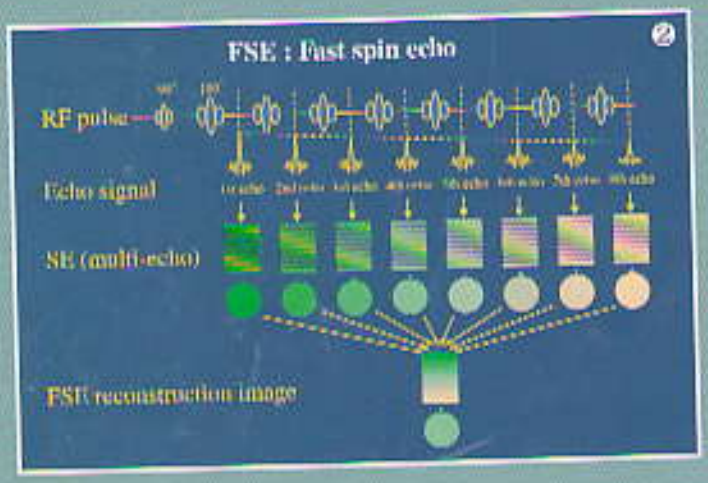
The 64bit multi-CPU console is equipped with the real time control pulse sequencer, dedicated high speed processing chips and image processing unit with built-in large capacity memory (512MB), thereby realizing complete multi-task processing environment to allow imultaneous operations of image acquisition, MIP processing and filming.

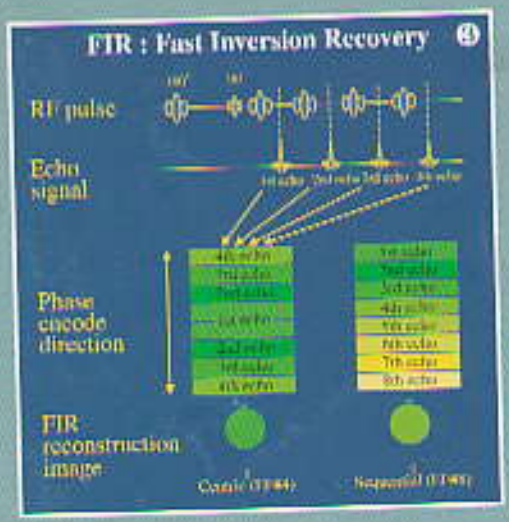


Advanced Technology

Development of pulse sequences without compromise AIRISII continues to provide most advanced imaging techniques and gives you answers to various clinical applications.







MR Angiography

❶ *Multi slab*

Multi slab is a technique to minimize reduction in blood flow signal in the peripheral region of the slab. In 3D-TOF sequence, the next excitation is given while blood is flowing in a slab, thereby the blood flow at the flow-out region receive excitation more than one time, resulting in reduction in signal component of the blood flow.
To avoid this, multi slabs technique in which each slab is thin and more than one slab are arrayed is used. In this technique, blood flowing in each slab in unsaturated state is excited, thus reduction in signal intensity can be minimized. With AIRISII, each slab is overlapped more than 50%, and the overlapped slices are used for image reconstruction. Furthermore, considering profile of slab, correction is made so that brightness of each slice can be flat to minimize difference between each slab. As the result, images featuring excellent continuity of blood flow and useful for diagnosis can be obtained.

Fast spin echo

❷ *In FSE sequence image is reconstructed from measured data of more than one echo, by using multi echo, that are acquired by giving phase encode different between each echo signal. Frequency of repeatedly applied 180° pulse is called Echo Factor (EF), and scan time can be shortened by 1/EF. A period from a 180° pulse to the next 180° pulse is called Inter Echo Time (IET). In AIRISII, these EF and IET can be changed in 1 steps according to the imaging region. Moreover, the echo positioning at the center of k-space that determines image contrast can be changed by Echo Shift (ES).*

❸ *In FIR sequence, measurement is made in the same sequence as FSE after giving the first 180° pulse. The period from 180° pulse to 90° pulse is TI time and changing TI results in providing various image contrast. After 180° pulse excitation, longitudinal magnetization is gradually recovered, but there may be a case that the signal intensity becomes "0" in the recovery course. Even if 90° pulse is given after that, any signal cannot be obtained because no longitudinal magnetization exists. The techniques using this principle is STIR sequence for fat suppression and FLAIR sequence for CSF suppression.*

❹ *ADA*

ADA is the technique to reconstruct an image by measuring data for about a half number of phase encodes in FSE sequence and using half scan mode. For example, with EF128 k-space can be covered wit one shot (one TR). In AIRISII, EF can be set up to 256, and using ADA together accelerating effect of scan time by 480 times-speed at maximum can be obtained. Application of this sequence can be endlessly widened to the clinical fields where heavily T2-weighted image is needed such as MRCP, Myelography, Urography, Ductography, etc. In these imaging applications, not only 2D measurement but also 3D measurement are usable, consequently images viewable

Neck MR angiography (2DTOF)
Gated imaging technique is used. 2DTOF sequence causes deviation in positional information on blood flow due to heart beat, but smooth image of blood flow can be obtained by applying gated imaging technique.

Neck MR angiography (2DPC)
Blood flow speed can be measured by gated imaging technique. Phase images can also be obtained simultaneously, thereby blood flow direction can be easily grasped

Spinal stricture *68-year-old Male*
These are data of joint motion study acquired by utilizing the AIRIS-II's feature "Open" structure.
By flexing the patient forward and backward with the joint motion device available as option, the compressed status of the spine can be observed in detail. (TR/TE = 250/25)

Cervical herniated disk
40-year-old Female
These are images with improved resolution by using FOV 180mm for SAG image and FOV 150mm for TRS image. A high S/N ratio can be obtained with the neck solenoid coil unique to AIRIS II and AMI & BWS function. Detailed information on the region compressed by herniated disk can be obtained.

Syringomyelia and cervical distortion *57 year-old Male*
Short TET of 20ms is used. Because of short data sampling time, image with less flow artifact can be obtained, thereby even a small lesion cannot be overlooked.(T2-SAGICOR TR/TE = 4000/120, EF = 11)

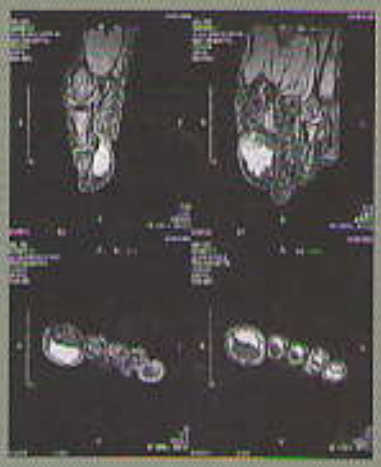
Left shoulder habitual dislocation (Extinction of posterior articular lip) *20-year old*
Under AIRIS II with a wide tabletop, shoulder joint can be easily positioned at the center of the magnetic field.
AMI & BWS functions provide a high S/N ratio with TE of In phase.
(TR/TE/FA = 500/17.0/90, Slice = 5.0mm)

Left frozen shoulder + periarthritis shoulder
49-year-old Male
The solenoid coil for joint can be flexibly set by being adjusted to the patient body.
Both T1-weighted image (left) and T2-weighted image (right) can be acquired with a high S/N ratio.*
(T1: TR/TE = 400/13, Slice = 4.0mm)

Hematoma in right femu
T2-weighted image with hig
with TET 25ms and 4mm slu
Image blur is suppressed by
clearly showing the interna
(T2: TR/TE = 4000/100, EF

...cer 55-year-old Female
...graphy-axial (option) can be ...ne-one side imaging or both ...
...ce data acquired with RSSG ...n be displayed in any ... applying MPR process to ...lesion.

Fractured media condyle & posterior condyle of tibia
57-year-old Female
High resolution image data of thin slice and 512 matrix acquired by fully utilizing AML BWS and DS. The region necessary for diagnosis can be fully covered by DS.
(T1: TR/TE = 460/20, Slice = 3.0mm, 36 slices)



Tumor
19-year-old Male
With very small FOV of 150mm and 512 matrix, sharp image of 3mm slice is acquired. By selecting TE near Out of phase, the lesion is clearly demonstrated.
(T2: TR/TE = 500/13.5)*

Osteoneux in tibia
87-year-old Male
Using the high sensitivity knee joint QD coil, high resolution, high quality image with 512 matrix and 3mm slice can be acquired. With IET22ms and FOV200mm, a sufficient S/N ratio is assured.
(T2: TR/TE = 4000/100, EF = 8)

Suspicious rerupture after meniscectomy of right knee.
33 year-old Male
T1-weighted image with a high S/N ratio can be obtained by setting very short TR to shorten scan time and with AML & BWS function.
(T1: TR/TE = 350/25, Slice = 4.0mm)

...DS ratio can be obtained ...hickness in FSE sequence. ...ng less number of EF, than ...ucture of the lesion.
...5)


Multiple array coil for head *


Head & neck coil *


TMJ coil *


Large joint coil *


Shoulder QD coil *


Wrist QD coil *


Breast coil *


Small joint coil *

Coils for All Regions

***AIRIS II** offers a variety of coils with coil designs to just fit every anatomical regions.*

Head MR angiography (3DTOF)

Both multi slab and MTC are used.

A wide region necessary for diagnosis from primary artery to peripheral arteries is imaged with a high intensity signal.

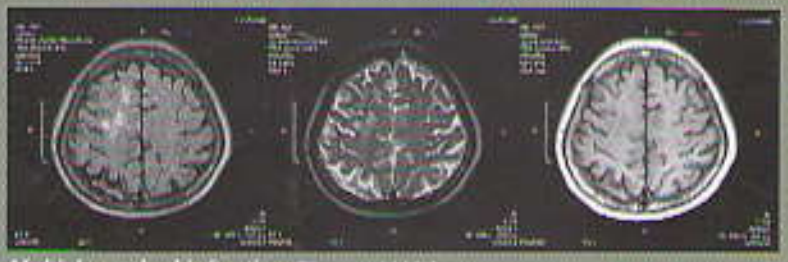
The boundaries between slabs are also smooth, thus providing images for easy diagnosis.

Myelography (3

High resolution images of 51 acquired with high EF45 and 1.8n

By applying MIP on similarly t image quality not inferior to a ro without radiation can be ob

Furthermore, by applying MRP the region of interest with 1m thickness can be di



Multiple cerebral infarction *79-year-old Male*

Signal from CSF is suppressed by FLAIR (left) sequence and small lesions of cerebral infarction near the brain surface is clearly detected. In T1-weighted (center) and T2-weighted image (right), they can hardly be identified because signal intensities in lesions and CSF are at the same level.

Suspicious vascular androblastoma *13-year-old Female*

With dual contrast method of FSE sequence, proton density image and T2-weighted image can be simultaneously acquired. The first three-echo signals are used for proton density image and the following three-echo signals are used for T2-weighted image. (PD/T2: TE/TE/TE2 = 4000/30/120)

MRCP (3DFSE)

Pancreatic duct is clearly demonstrate case. Measurement by 3DMRCP is du respiratory effect is great. With MRIS technique can be used even in 3DFSE

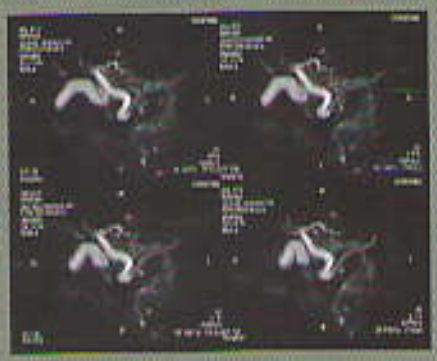
Cerebral infarction sequela

T1 weighted image (left) acquired by using both AMI and RWS. Due to short TR and TE, contrast between white matter and gray matter is excellent, and the verge of the lesions is clearly depicted.

(TR/TE = 450/15, 12 slices)

Lumbar herniated disk *27-year-old Male*
Thanks to the high sensitivity flexible QD body coil and AMI & BWS function, sharp image with a small FOV can be obtained even for TRS lumbar image that requires a high S/N ratio.
(T1-TRS: FOV = 200mm, TR/TE = 500/18)

5th lumbar vertebra spondylolysis and spondylolisthesis
90-year-old Male
For the region where motion artifact is little, IUT30mt is used to obtain an image with a high S/N ratio. TRS image for which high resolution is required is acquired with FOV200mm.
(T2-SAG: TR/TE = 4000/120, EF = 8)

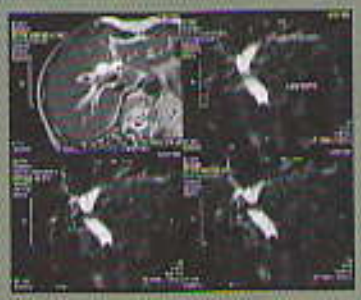


Chronic pancreatitis
67-year-old Male
ADA image with ADFSE acquired by one shot. By reconstructing rotation images with MIP, the structure of pancreatic duct featuring pancreatitis can be observed.
(TR/TE = 7000/800, EF = 1.36, Slice = 3mm)

Common bile duct ectasis
69-year-old Female
Breath-hold MRCP image acquired by 2 shots using ADA. The images showing the cholangiectasis as well as pancreatic duct can be acquired in a short time with little strain to the patient. (TR/TE = 7000/500, EF = 64, Scan time = 14sec.)

...ven for healthy ...dy because ...gated imaging ...uence.

Hysteromyoma and dermoid cyst *41-year-old Female*
STIR is an effective sequence to identify the lesion as fat or others as shown in this case. Thanks to the excellent field homogeneity provided by AIRIS-II, fat signal can be suppressed evenly even for a large field of view.
(STIR: TR/TE = 3000/800/25, EF = 10)



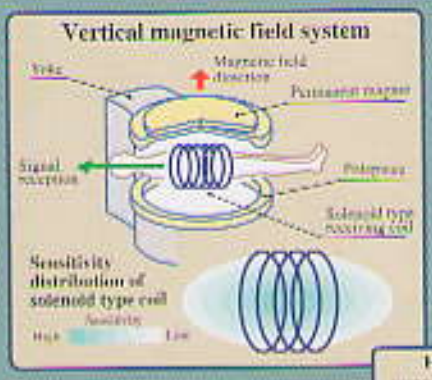
Stone in common bile duct and occlusive cholopiania
50-year-old Female
Images acquired by one shot with ADA of ADFSE sequence. Stone is shown with low signal and distended bile duct can be checked in 3mm steps. (TR/TE = 7000/800, EF = 1.36, Slice = 3mm)

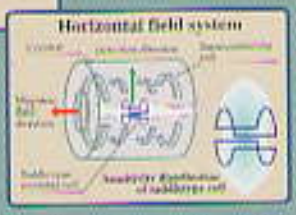
Endometrial
cyst or cysi-hypertrophic endometriosis including inveterate hemorrhagic component
52-year-old Female
AIRIS-II with 0.3T magnetic field strength featuring excellent performance against artifact. Parasympathetic nerve depressor or the like is not required for physiologically inevitable vermiculation.
(T1-SAG: TR/TE = 400/18.4, Slice = 7.5mm, 14 slices)

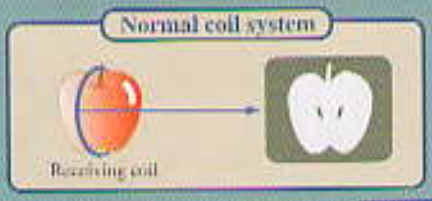
Liver cirrhosis
62-years-old Female
By doubling NSA using half scan technique to improve averaging effect and shortening data sampling time by setting higher BW. T1-weighted image with less artifact can be obtained.
(T1: TR/TE = 600/16, 15 slices)

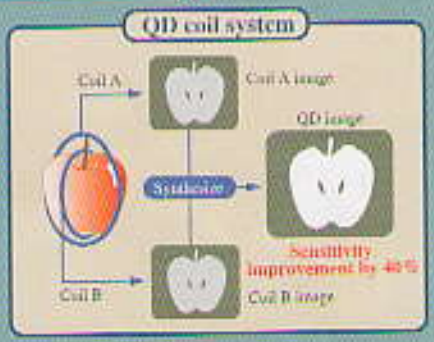
Coil Technologies

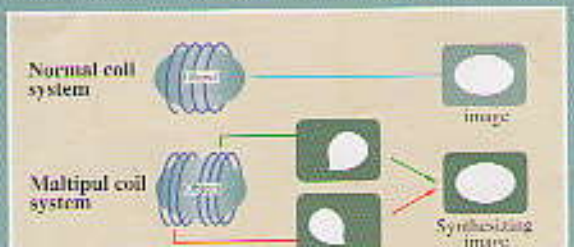
Receiving coil is the key component of MRI system. Patient-friendly, Easy setting and High sensitivity technologies are the essential factors.











Merits of vertical field system

AIRIS II, having two magnets at the top and bottom to generate a vertical magnetic field, can detect reception signals in the longitudinal direction. By placing a solenoid coil around the region to be imaged, sensitive regions can be effectively used. On the other hand, the conventional horizontal magnetic field systems cannot detect signals in thelongitudinal direction. Therefore, saddle type or similar type coils are used as receiving coil. As shown below the saddle type coil has, a structure to sandwich the imaging region with two loops, wasting a half of the sensitive zone. Difference in sensitivity between the two types has been experimentally proved to be more than 40%, that is equivalent to two times difference in scan time.

Original coil designs

AIRIS II features a rich lineup of coils. Each of them provides patient-friendliness, easy-operation and advancedtechnology for high image quality. The neck coil is of split type for easy setting and open type to eliminate occlusive feeling. A flexible coil fitting to the patient body can be selected. Flexible coils are designed to softly fit to any patient with a high sensitivity. Delicate considerations are given to details of easiness in operation. For example, an arm notch is provided for imaging thoracic region.

High sensitivity QD coil system

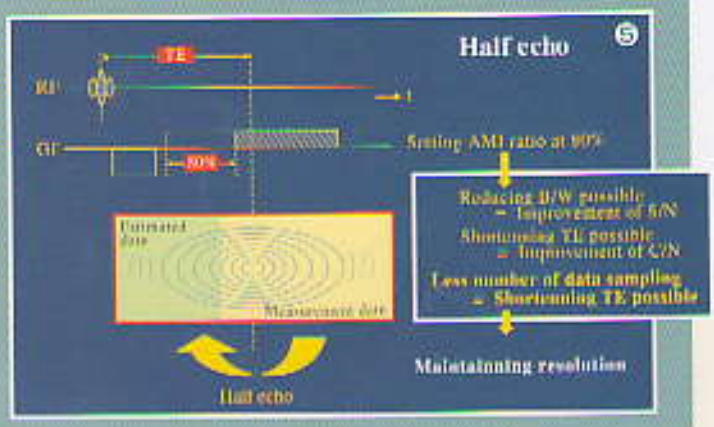
QD coil system is a technology to improve sensitivity by combining two coil systems. Detection of signals by simultaneously using two coils which have a same sensitivity region can produce two times the signals. In this case, if there is no interference between the two coils and they are independent each other, total noise level is not doubled but becomes √2. As a result, signal-to-noise ratio can be improved by about 40% heigher than solenoid coil.

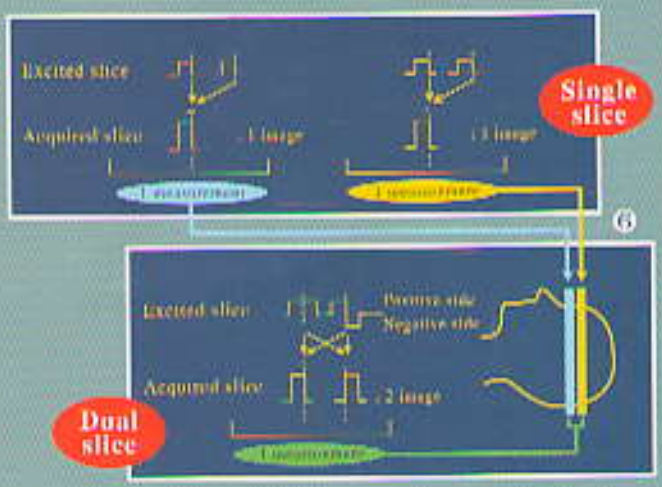
*Multiple array coil system**

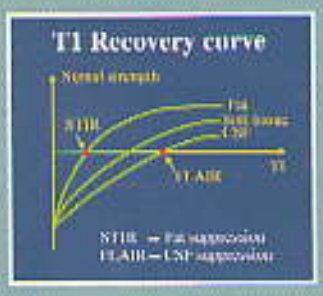
Featuring both high sensitivity and wide field of view. It is the most advanced coil system made available by high precision digital RF system. Receiving coils independent each other up to 4 channels can be simultaneously used. It is the revolution in technology that has realized both high sensitivity and wide field of view.

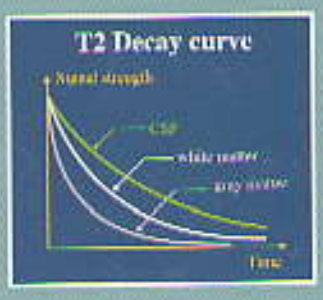
Principle

In general, high sensitivity and wide field of view are not satisfied at the same time in receiving coil. Therefore, a surface coil of a small diameter having a high sensitivity regionally is placed closely on the imaging region. The coil system in which several pieces of this regional coil are arrayed and used simultaneously to realize both a high sensitivity and wide field of view is the multiple array coil system. In this coil system, interference between coils is a problem. If two receiving coils are used simultaneously, they are coupled together to become equivalent to a single large coil. Such coil cannot provide a high sensitivity. This problem has been solved by the multiple array coil newly developed by Hitachi's unique technology to cancel such interference, thereby succeeded in simultaneously









Spin Echo and Gradient Echo

● *AMI & BWS*

AMI is the function to set asymmetric ratio of echo signals to be acquired against the peak of echo signals. Setting AMI allows improvement in contrast resolution resulting from shortened TE, increase in number of slices and improvement in S/N ratio by reduction in BW.

Band Width (BW) means frequency bandwidth of reception signal to be used for imaging. Because noise components are evenly distributed all over the frequency bandwidth, reducing BW results in reduction in noise amount to be measured. That is, in case of obtaining image with the same condition, reducing BW can improve S/N ratio of the image. In ARIS*II, BW can be set to any value thanks to BWS function. Automatic setting function of AMI and BWS is also available, thereby the highest S/N ratio with any imaging parameters can be secured.*

❺ *Half echo*

Half echo is the function to prevent degradation in spatial resolution caused by AMI. Setting a high AMI ratio causes less number of data sampling in the high frequency region, resulting in degradation in spatial resolution.

For this reason, applying Half echo function makes image reconstruction by estimating the data for the part where data are not acquired, thereby the image resolution can be maintained without degradation.

❻ *Dual slice*

Dual slice is the technique to acquire double number of slices with the same TR. The first RF pulse excites both the areas for 2 slices toward positive side, and the second RF pulse excites the first slice toward positive side and the second slice toward negative side. Adding these two kinds of data, the second slice image can be obtained by subtracting the first slice.

By using this dual slice technique together with AMI and BWS, the region necessary for diagnosis can be covered even with thin slice.

Pulse sequence	PD	T1	T2	T2*	Typical applications
Spin echo	●	●	●		General imaging
Inversion recovery		●	●		STIR image, FLAIR image
Gradient echo		●		●	Dynamic study Fluoroscopy Cine imaging 3D imaging
SARGE				●	
RS-SARGE		●			
TR-SARGE				●	
Fast SE	●	●	●		Max. 480 times speed, Dual contrast, MRCP, MR myelography, STIR image, FLAIR image
Fast IR		●	●		
3DFT MR angiography *					Single/Multi slab imaging

Application Technology

Highly optimized Graphical user interface, together with the color display achieves smooth and pleasant operability.

Advanced GUI operation

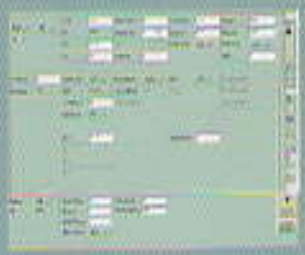
GUI (Graphical User Interface) operation system, which allows the operator not only to set scan parameters but also to start scan operation and adjust display level, is employed. Since the basic operation screen is displayed with position-fixed card, the floating window does not disturb operation. Special attention is also paid to easy visualization on the 21" color display.

Easy operation

There is no limit in combination of scan parameters variable in an extremely wide range. Therefore, optimum combinations and imaging sequences can be preset according to imaging region and required image type, thereby any desired protocol set can be called and set from the clinical study library to allow easy operation.

Expert operation

In addition to the basic scan parameters such as FOV, TR and TE, detailed parameters for AMI function, RWS function and others can also be set.
TE, which can be set in 0.1ms steps and flexible parameter setting for various high performance functions expand clinical applications of AIRIS Ⅱ.



Guidance operation

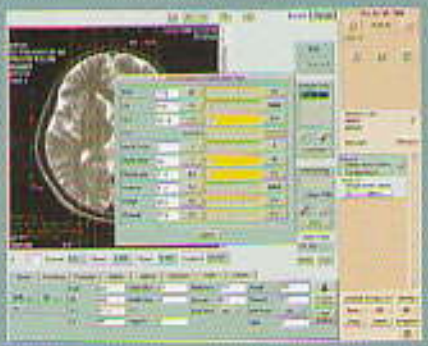
If any value exceeding the specified range is entered, unique color guidance requesting attention appears, thus helps the operator to set various parameters.

Network operation

DICOM3.0 is incorporated in the system to support easy network operation.*

Real-time operation

High speed operation on the workstation allows real-time 3D data processing.



● *Real-time MIP*

Unnecessary area can be deleted from 3D image data such as angiography image by delineating a free curve on projected images in three directions.
Rotating image display can also be processed in real time. Reconstruction of rotated image can be executed quickly only by setting an angle step.

● *Real-time MPR*

Any section image can be reconstructed in real time from 3D image data. In combination with fast 3D imaging sequence, AIRIS Ⅱ *shows impressive power in analysis of complicated joint and head strucures.*

The I-MR world that AIRIS has realized

Not only utilization of MRI system as diagnostic imaging system but also its application directly connecting to treatment. That is I-MR (Interventional MR and Intraoperative MR).

Why has I-MR become available?
Because Open type MRI systems typically represented by AIRIS series is now put in use, together with in-room monitoring function, MR fluoroscopy allowing nearly real-time imaging, open type RF receiving coil interventional MR is a clinical modality to allow the physician to lead the catheter up to the affected region using MR fluoroscopy image as guide. With the needle reached the target, various attempts have been made in combination with new treatments such as laser irradiation,injection of medicament, high frequency wave therapy,cryogenic operation, etc.

Intraoperative MR has started ahead in the field of neurosurgery treatment.
The open type MRI system is installed in the operation room and used to check immediately after craniotomy, by scanning the patient at high speed with the MRI system, if lesion such as brain tumor has been surely resected or not.

Flexible siting & Economy

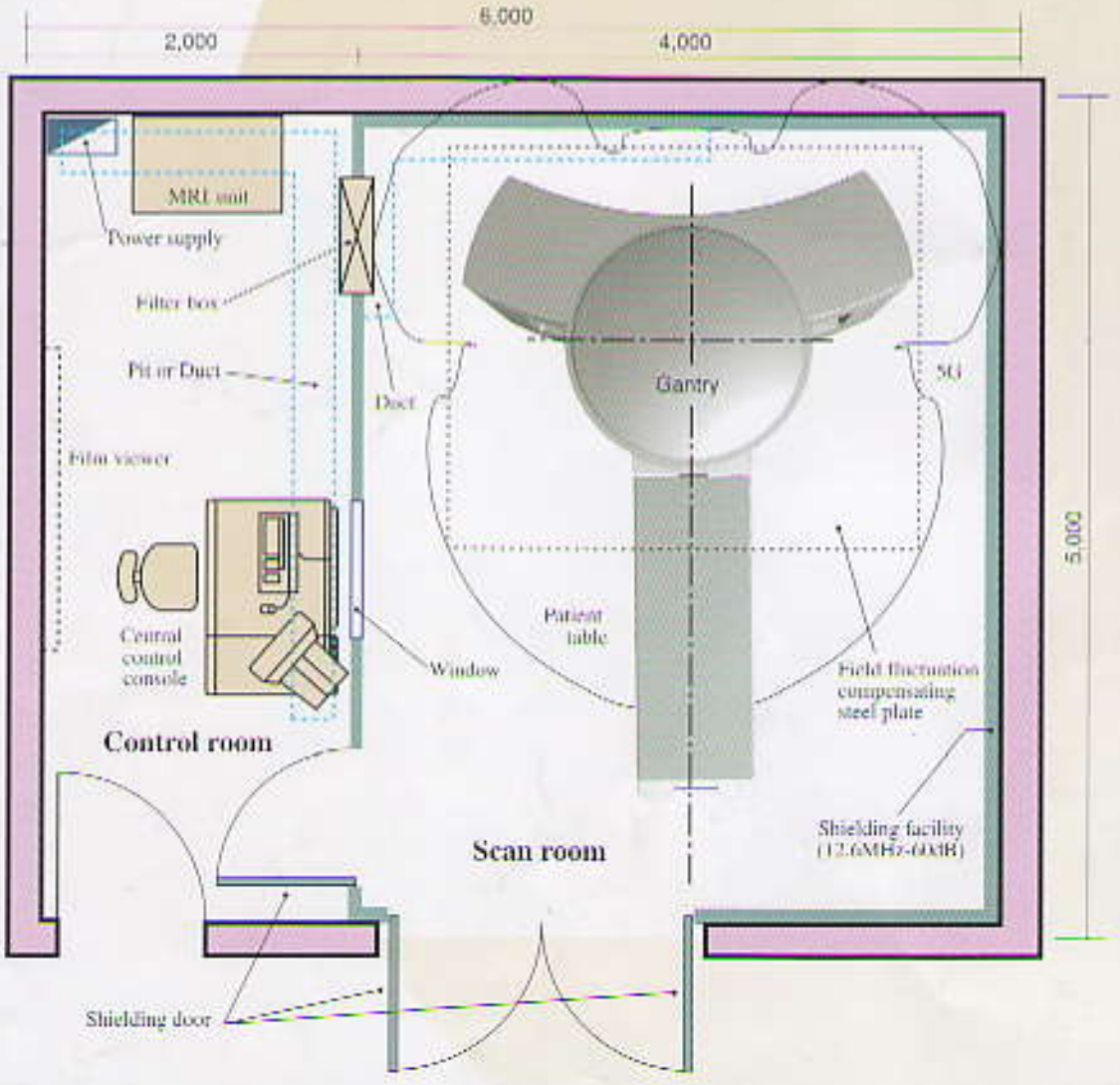
MRI system helps you to explore new clinical applications.
AIRISII helps you make it.

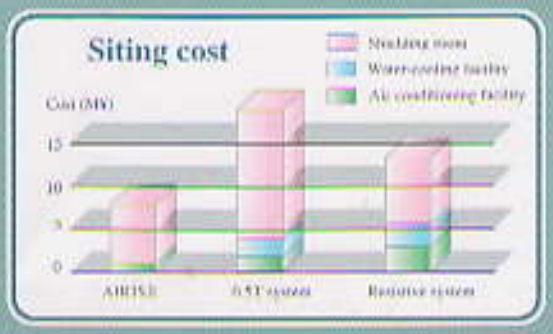
Flexible siting

Incomparably compact design. The standard installation space is only less than 25m 2. The MRI scan system integrated in one unit requires no machine room. Power consumption is only about 3kW. AIRISII *features extraordinary economy. Needless to say, 5G line is within the scan room.*

Economy

Compare AIRISII *economy with other systems!*





* examinations

2DPC : 2 Dimensional Phase Contrast
3DFSE : 3 Dimensional Fast Spin Echo
3DTOF : 3 Dimensional Time of Flight
ADA : Asymmetric Data Acquisition
AMI : Asymmetric Measurement Imaging
BWS : Band Width Selection
FLAIR : Fluid Attenuated Inversion Recovery
IET : Inter Echo Time
MIP : Maximum Intensity Projection
MRCP : MR Cholangio-pancreatography
MTC : Magnetization Transfer Contrast
RSSG : RS-SARGE = RF Spoiled SARGE

Specifications

Specifications

- Magnetic field
  - Static field strength ····· 0.3 tesla
  - ^{1}H resonance frequency ····· 12.7 MHz
- Imaging
  - Imaging method ····· 2 - dimentional Fourier transform
    3 - dimentional Fourier transform
  - Imaging parameters and operations ····· Protocol - programmed
  - Imaging coverage ····· Whole body
  - Field of view ····· 50 to 350 (320) mm in diameter
  - Imaging technique ····· a) Spin echo (SE) (including Fast SE)
    b) Inversion recovery (IR) (including Fast IR)
    c) Gradient echo (GE)
  - Slice thickness ····· 0.5 ~ 100 mm
  - Slice plane ····· a) Transaxial
    b) Sagittal
    c) Coronal
    d) Oblique
    e) Multi-angle
  - Multi - slice ····· 256 slices max.
  - Multi - echo ····· Up to 4th echo
- Measurement and reconstruction
  - Automatic imaging function ····· Frequency locking;
    automatic tuning;
    automatic gain control;
    automatic shimming
  - Imaging matrix ····· 64 to 512 × 64 to 512
  - Image reconstruction time ····· 0.05sec. (for 256×256)(including display)
  - Display matrix ····· 1024 × 1024
- Image manipulation ····· Measurement of distance between 2 points;
  Image profiling, ROI setting, Real - time MPR;

Standard system composition

Gantry	1
Patient table	1
Operator's console	1
MRI unit	1
ECG /peripheral pulse gating unit	1
Filter box	1
Standard set of accessories	1
Receiver coils	1

Head QD coil (1) Medium flexible QD body coil (1)
Large flexible QD body coil (1) Joint coil (1)

Options

Laser imager	
Knee QD coil	TMJ coil
Small joint coil	Large joint coil
Head/neck coil	Breast (mammo) coil
Small flexible QD body coil	Multiple array head/neck coil
DICOM 3 interface	Multiple array package
MR fluoroscopy	MR angio package (TOF, PC)

Facilities

- RF shielding facility The scan room must be RF shielded to +60 dB in a field of 12.7±0.5 MHz in central frequency.
- Air conditioning Air conditioning is required to maintain the ambient room temperature and humidity within the recommended operating range. (see ENVIRONMENTAL CONDITIONS below)

Power requirement

Single-phase 200V AC, 8kVA (for MRI system only)

Grounding facility

100Ω or less in grounding resistance exclusively for MRI system

Installation spaces

- Scan room (where the gantry and patient table are installed)
  - Standard required floor space ····· 20 m² (= 4 m × 5 m)
  - Ceiling height ····· 2.2m or more from the floor level
  - Required floor strength ····· ≧ 3.0 ton / m² (2.5 × 3.0 m)
- Control room (where the MRI unit, operator's console, laser imager, air conditioner, and other components are installed)
  - Standard required space ····· 10 m² (5 m × 2 m)

Environmental requirements

- Ambient temperature ····· (a) Scan room 20~28 ℃
  (Temperature fluctuation: within ±3℃)

磁遊空間

TÜV CERT
DIN EN ISO 9001, JIS Z 9901,
EN 46001, ISO 13485, JIS Q 13485
Certificate: 00 105 79041

ISO 14001 JACO

NATIONAL ACCREDITATION OF CERTIFICATION BODIES

- Specifications and physical appearance may be changed without prior notice for improvement of performance.
- Be sure to read Instruction Manual for correct operation of the equipment.

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