Signa Infinity 1.5T

GE Medical Systems

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Nearly 20 years ago, GE took clinical MR imaging to a new level with the introduction of the 1.5 Tesla Signa® system.

Today, Signa users are the largest community of 1.5T MRI practitioners in the world. And, year after year, they help us push the performance level even further with innovative techniques and applications.

We work with over 80% of the academic medical institutions in the world. This dynamic partnership nurtures a continuous flow of ideas that quickly find their way into your MRI suite. Fluoro-triggered MRA and spiral imaging are just a few of the most recent advances.

We call it the Infinity philosophy. A continuous cycle of listening to Signa users and developing an infinite stream of new techniques and applications that meet real clinical needs.

Our new Signa Infinity 1.5T system brings this philosophy to life. Its hardware and software advances provide a platform for present and future applications, and enable the most comprehensive clinical capabilities in the industry. Significant new capabilities include three-plane with double-oblique and interactive Graphic Prescription… faster breath-hold imaging protocols … automatic correction of signal intensity fall-off from phased array surface coils … more flexible TI-FLAIR and FRFSE techniques…parallel imaging techniques…and much more.

With a Signa Infinity 1.5T system, your possibilities are endless and the future of MRI is always in your hands.
Building a reputation, component by component

GE was the first to make MRI clinically viable at 1.5 Tesla and we’ve never looked back. Our gold-standard magnet, gradient, and RF technologies continue to set the pace in the industry.

The GE magnet: it all begins here

The first 1.5T superconducting magnet. The first short bore system with superconducting shims. The first high-field open superconducting magnet. These are just some of the innovations that came from GE labs.

We build our own magnets in order to control every detail of design and production. This enables us to achieve the highest levels of field homogeneity and stability—the critical difference between GE magnets and all others. Moreover, we build our magnets with the future in mind, so as technology advances, the GE magnet can adapt. A good example is our innovative TwinSpeed 1.5T system.

The K4 magnet in our Signa Infinity 1.5T line is our latest advance. Its accurate field uniformity throughout the entire imaging volume delivers consistent results even in demanding applications, such as off-center FOV fat saturation imaging and high-resolution 3D spectroscopy. The K4 magnet is cost-effective too, with site-friendly active shielding and a three-year interval between cryogen refills.

Speed and resolution: depend on the power of GE gradients

GE leadership in gradient technology spans more than a decade. We were the first to use shielded gradients...the first to offer ultra-high performance non-resonant gradients and optimized gradient systems...and the first to combine two gradients in one system.

Signa Infinity gradients deliver scanning speed that is—quite literally—breath taking. Short TR/TE combinations and short Echo Spacing will improve your breath-hold exams and enable ultra high-resolution vascular and neurological studies. GE gradients also give you the power to visualize small structures like IAC nerves and branches of the biliary tree, and to conduct the highest b-value diffusion imaging.

RF Technology: flexibility built in

Coils have always been a priority at GE. We were the first with phased array coil technology and endocavitary coils, and today offer more multi-channel and 4D multi-station RF coils than any other manufacturer.

In fact, we designed our non-proprietary RF architecture to be an open door for third-party coil developers. We offer the largest selection in the industry—with more on the drawing board. That means you can choose the right coils for your clinical and demographic mix with no compromising.

No matter what the application, Infinity’s open RF architecture delivers excellent coverage and uniformity. You get the high SNR and spatial resolution you need for high quality images.
Software applications:
expanding your clinical tools

Your Signa Infinity 1.5T MR system comes with the most comprehensive package of clinical applications software in the industry. It offers the advanced pulse sequences you need to assess anatomy, morphology, physiology, and function, including:

- Single Shot Fast Spin Echo (SSFSE) for breath-hold imaging
- Oblique 3D and 1024 ZIP for 3DTOF, 3DFSE and 3DFGRE acquisitions
- Elliptic Centric View Ordering for high resolution angiography studies
- Single-shot EPI, Gradient Echo, IR, and Spin Echo sequences
- ClariView image filtering for better image definition
- Three-plane and interactive Graphic Prescription for quick optimization of scan geometry
- Faster breath-hold imaging with FAME and STIR protocols
- SCG – a breakthrough in abdominal and spine imaging
- Greater flexibility to tailor TI-FLAIR and FRFSE techniques
- Enhanced SmartStep for PV run-offs
- SmartPrep navigator-tracked bolus detection for contrast angiography
- iDrive Pro real-time interactive imaging
- Tagging, blood suppressed FSE, and fast cine cardiac imaging

You can also choose from a wide array of software programs, including:

- Spectroscopy packages for 3D brain and prostate imaging
- Specialized Neuro, Angio, Cardiac applications:
  - 2D cine and 3D FIESTA
  - Fluoro-triggered MRA
  - Delayed enhancement
- Higher b-value diffusion weighted imaging
- Very Selective Suppression (VSS) saturation pulses for improved spectroscopic imaging

Unsure if an application package is right for your needs? With the GE eFlexTrial program, you can download and test-drive certain software packages before you commit.
Coronal T1-weighted Spin Echo image of the brain using a modified flip angle
Breath-held coronary artery image of the heart
FSE IR image of brain demonstrating periventricular changes
High-resolution MRA of the Circle of Willis acquired with Magnetization Transfer
3-minute, high-resolution IAC image using 3D FIESTA
Cine SSFP D1-weighted Spin Echo image of the brain using a modified flip angle
Short-axis image of the heart acquired with FIESTA
Black-blood image of the heart acquired with Double Inversion Recovery
Axial image of the lumbar spine with excellent visualization of the nerve roots
Sagittal thin slice T2-weighted image of the cervical spine
Black blood image of the heart acquired with Double Inversion Recovery
Abdominal MRA study acquired with Elliptic Centric View Ordering
Multi-phase abdominal MRA study acquired with Elliptic Centric View Ordering
Surface-rendered image of the thoracic vasculature
Axial image of the lumbar spine
Long-axis image of the heart acquired with Fluor
T1-weighted sagittal image of the lumbar spine
Sagittal thin slice T2* GRE images of the cervical spine
High-resolution, volume-rendered spinal MRA using 3D Fast GRE
Contrast-enhanced MRA study acquired with ASSET and an acceleration factor of 2
Breath-held image of the abdomen acquired in 8 seconds with ASSET factor of 2
Multi-phase, contrast-enhanced image of the liver using FAME.

Dual-echo exam of the abdomen acquiring in-phase and out-of-phase images simultaneously.

High-resolution T1-weighted image of the knee acquired with a 12 cm FOV and zipped to 512.

Thin slice, fat-suppressed off-center FOV image of the ankle.

Multi-station contrast-enhanced MRA of the peripheral vasculature acquired with SmartPrep.

Multi-station contrast-enhanced MRA of the peripheral vasculature acquired with SmartPrep.

High-resolution sagittal T1-weighted image of the ankle.

Multi-phase, contrast-enhanced image of the liver demonstrating excellent fat suppression acquired with FAME.

MRCP study acquired with extended ETL FSE.

High-resolution, off-center FOV image of the shoulder.

High-resolution, fat-suppressed off-center FOV image of the elbow.

Breath-held image of the liver demonstrating excellent fat suppression acquired with FAME.

MRCP study acquired with extended ETL FSE.

3D CSI image of brain with corresponding Metabolite Color Overlay and Spectra.

Prostate Spectroscopy demonstrating citrate and choline Spectra with corresponding Metabolite Color Overlay.

Restricted Diffusion signal demonstrated with b-value of 2000 s/mm².

High b-value Diffusion with an optimized TE for improved image contrast and SNR.
Unmatched parallel processing capability

Signa Infinity systems run on GE’s legendary LX computer platform—one of the fastest in the industry and the proven power behind all our MR systems. Its parallel computer architecture with Reflex Array technology provides ultra-fast reconstruction and unmatched simultaneity for high productivity in every aspect of your workflow.

Patient handling: greater comfort for better results

A comfortable patient is more cooperative, and cooperative patients enable your operation to run more efficiently and profitably. Signa Infinity 1.5T systems offer a number of comforting features:

- Generous 60 cm bore opening helps put patients at ease and lets you accommodate large patients
- Dual-sided controls improve technologists’ access to patients and management of cables and IV tubes
- Feet-first positioning adds flexibility to patient positioning

GE invented the docking table, and it has become a vital contributor to safety and site productivity. It enables patient preparation outside the scan room and quick patient removal in an emergency.

The LX graphical user interface is common across all Signa MR systems as well as our LightSpeed CT scanners. This facilitates technologist cross-training and reduces overall FTE requirements. Workflow management is intuitive with such features as:

- **Picture This™** protocol selection tool—a GE exclusive that uses thumbnail images to simplify scan set-up
- **Three-plane and interactive graphical prescription**—the most versatile graphic prescription program available
- **Scan-Pause-Restart**—a useful tool that lets you temporarily suspend and then resume scanning
- **FastForward™ one-second prescan**—to save as much as one hour/day in set-up time
- **JumpStart™ scanning**—to initiate pre-programmed protocols in just three clicks of the mouse

With optional second table, you can scan and prep simultaneously, maximizing scan time. In emergencies, the patient can be removed from the scan room within thirty seconds.
Continuum Commitment:
iinvest with confidence in GE MR

Invest in GE MR and you’re investing in a partnership with an unequaled track record of success in MR and a pathway to the future that will protect your investment.

The legacy? Our history of technology innovation. The highlights would fill a brochure of its own, but here are just a few of the GE milestones in MR:

- First commercially-available 1.5T MRI system
- First docking patient table
- First shielded gradients
- First digital RF system
- First phased array RF system
- First short bore system with superconducting shims
- First dedicated cardiac system
- First superconducting high-field open system
- First twin gradient system
- First commercially-available 3.0T brain and whole-body scanner

The clear path to the future?
Our Continuum Commitment.

Well before GE installed its first Signa MR system in 1984, we made a commitment: Our sites would never fall into the obsolescence gaps that hardware and software advances might open up.

GE is the only manufacturer that offers a true upgrade path for its MR systems. As technology grows in sophistication and capability, you can incorporate these advances into your current GE MR system. In fact, a Signa system installed in 1984 can be every bit as cutting-edge as a completely new system installed today.

South Jersey Radiology Associates, Voorhees, New Jersey, installed a Signa 1.5T system in 1987. By means of the GE Continuum upgrade path, that same system is currently at a state-of-the-art EchoSpeed configuration with an LX operating system.
Your investment in a Signa Infinity MR system is supported by the strongest financing, education, and service programs* in the industry, including:

**Innovative financing solutions**, designed to your needs.

**MR Masters Series physician training**, a CME-accredited program that enables new users to learn advanced MR techniques from luminary radiologists at their facilities.

**Ongoing applications training**, from regional technologist seminars to interactive programs on TiP-TV, GE's satellite Education network.

**Beyond Maintenance**, our MR service commitment that supports your site with up to a 99% uptime guarantee, the industry’s most qualified service engineering team, and InSite™ remote services delivering on-demand 24x7x365 technical and applications support through the Signa operator console. InSite performance reports on your MR system help improve clinical productivity and enable managers to increase quality, reduce cost, and improve asset performance.

**Consultative services**, including MAPS (Market, Analysis, and Planning Service) studies that provide a demographic snapshot of your service area to help you develop effective business strategies, and Marketing Assistance to help you build referrals.

**A century of innovation and solid support**

For more than 100 years, healthcare providers worldwide have relied on GE Medical Systems for medical technology, services and productivity solutions. So no matter what challenges your health system faces – you can count on GE to help you deliver the highest quality healthcare.

* Check with your GE Representative for availability of service and training programs in your area.