SIGNA Architect: Unleash Clear Advances with Clear Advantages

SIGNA™ Architect's cutting-edge platform makes it the most versatile, adaptable and powerful system available from GE Healthcare to date. Now, feet-first, whole-body coverage is made easy. Dynamic yet insightful, the SIGNA Architect is MR built to work for you, not the other way around.
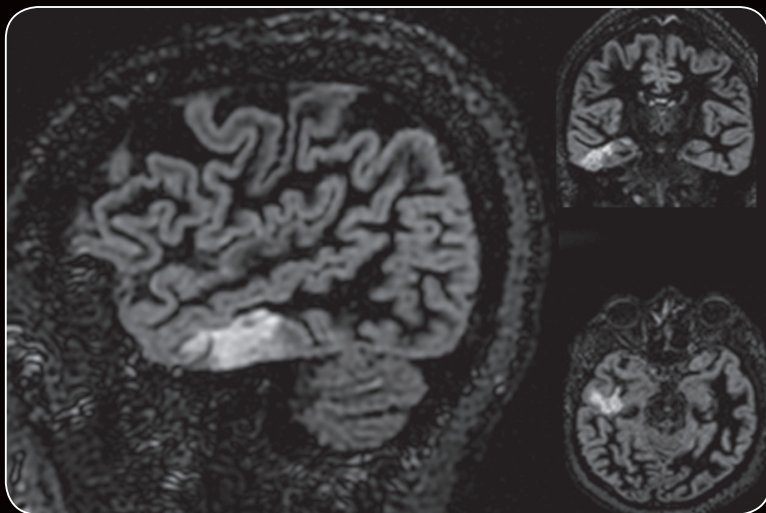
Figure 1. Cube DIR
1.4 x 1.4 x 1.4 mm

A total digital win

SIGNA Architect is a platform designed for productivity. It takes conventional RF architecture and utilizes miniaturized electronics to improve fidelity of the received RF chain from more elements than previously possible. With Total Digital Imaging (TDI), SIGNA Architect provides a true digitized 128-channel RF chain to eliminate unnecessary noise and improve SNR. A full 50 x 50 x 50 cm FOV in a 70 cm wide bore delivers phenomenal homogeneity that facilitates image off-center anatomy such as shoulders and hips.

"SIGNA Architect is a high-end 3.0T that leaves no applications off the table. It makes no compromises and provides a wide range of advanced applications that will appeal to the most progressive, advanced users and academic centers," says Lawrence Tanenbaum, MD, FACR, Vice President and Medical Director,

Eastern Division, RadNet, Inc. "It is the type of scanner we want at our centers of excellence where we provide the full gamut of basic and advanced MR imaging. We like the idea that there are no limits on the type of advanced applications we might want to perform."

Consistent, high-quality 3.0T imaging is the rule, not the exception. GE Healthcare's latest B1 uniformity correction, reFINE, improves RF pulse efficiency for clearer, crisper signals no matter the patient's position or composition. deFINE enhances the image appearance with integrated, inline optimized settings that can be generated for each individual sequence or for the entire exam.

GE Healthcare's latest reconstruction platform, Orchestra, improves processing speed of channel count acquisitions to enable new possibilities for the integration of advanced

reconstruction elements. It delivers enhanced productivity gains by increasing image reconstruction speed and minimizing workflow disruptions to support the most demanding applications such as HyperSense.

Elevate MR performance

The new SIGNA™Works productivity platform redefines productivity across the breadth of core imaging techniques. SIGNA Architect supports ImageWorks, ViosWorks, HyperWorks, and SilentWorks (see SIGNA™Works page 38).

"MAGiC is a revolutionary technology that allows the acquisition of multi contrasts in a single scan," Dr. Tanenbaum adds. "There are obvious benefits in patient comfort and it should also reduce the amount of patient motion in routine scans as
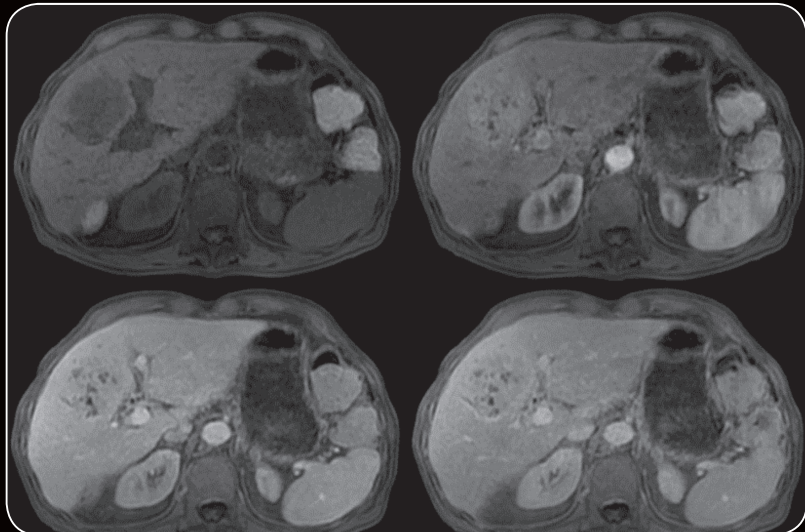
Figure 2. QuickStep MRA

Figure 3. Navigated Turbo LAVA
Free Breathing Dynamic Liver
1.9 x 2 x 4 mm
:20 sec/phase

well as help reduce exam repeat rates. MAGiC will play a role in the day-to-day imaging practice, as well as capture the imagination in the areas of quantitative imaging that can facilitate diagnosis in clinical care."

SIGNA Architect's eXpress dockable table delivers feet-first or head-first imaging for a quicker, more pleasant, and targeted exam. Improved spine image quality provides better penetration and uniformity with improved RF performance. Keep patient satisfaction high with the most comfortable memory foam surface available to alleviate pressure points. And, with IntelliTouch patient positioning, just touch the edge of the table to position patients while the detachable egress helps you quickly move patients from the MR suite.

Introduced with the SIGNA Architect, the TDI 48-channel Head Coil§ delivers phenomenal performance for every patient. A fit-adaptable design addresses 99.99% of the population— including extremely large heads and short necks—while preserving the highest SNR and supporting advanced imaging capabilities such as HyperWorks technologies. The TDI 48-channel Head Coil also includes advanced features such as video goggles for patient comfort and fMRI studies, plus an industry-leading EEG-compatible design.

Lawrence Tanenbaum, MD, FACR,
is the Vice President and Medical Director, East Division of RadNet, Inc.

§The TDI 48-channel head coil is 510(k) pending at US FDA. Not available for sale in the United States. Not CE-marked. Not for sale in all regions.

‡The 16-channel T/R wrist coil is 510(k) pending at US FDA. Not available for sale in the United States. Not CE-marked. Not for sale in all regions.
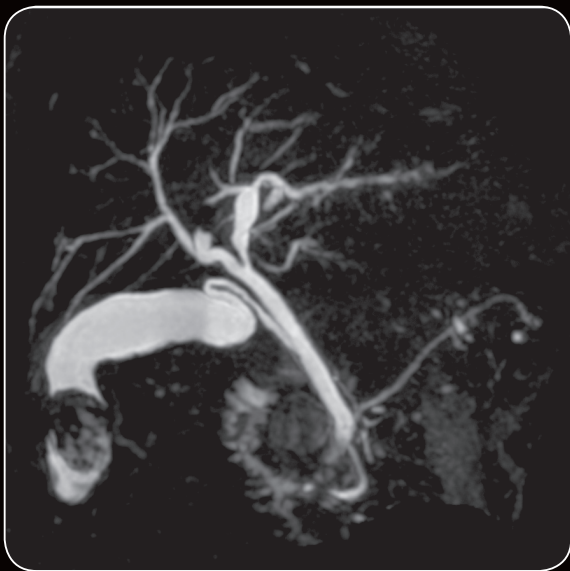
Figure 4. 3D MRCP
1.4 x 1.4 x 1.2 mm

Figure 5. Total spine imaging

A revolutionary advance in RF coil design by replacing analog blocking circuits with intelligent Micro Electro-Mechanical Switches (MEMS) supports ultrafast coil switching times for further expansion of zero TE imaging capabilities and reduced power consumption.

SIGNA Architect is prepared for Digital Surround Technology, which combines signals from every coil element. The exceptional SNR and sensitivity of the high-density surface coils are combined with the superior homogeneity and deeper signal penetration of the integrated RF body coil, resulting in richer spine and body image quality that's up to 25% better. Improved parallel imaging for MSK is made possible with new high-channel count coils including the 18-channel T/R knee, 16-channel T/R wrist‡, and 16-channel shoulder coils.

"The latest generation of high-density coils should help guide us to new heights in spatial resolution, as well as give us more patient-focused exams with shorter scan times," Dr. Tanenbaum says.

Through the GE Continuum™, existing Discovery™ MR750w customers can upgrade to SIGNA Architect to energize their MR imaging service in as little as 5 days. **Ⓢ**

Lawrence Tanenbaum, MD, FACR, is the Vice President and Medical Director East Region – Director of CT, MR and Advanced Imaging of RadNet, Inc. Dr. Tanenbaum is a senior member of the American Society of Neuroradiology and a long term member of RSNA as well as the Roster of Distinguished Scientific Advisors of the RSNA. He is also a member of the editorial boards of several journals and educational organizations and a regular reviewer for several scientific journals.

RadNet is a national leader in outpatient imaging. Backed by 30 years of experience, the organization delivers high-quality, cost-effective solutions for all 290+ centers in its network. Founded in 1984, RadNet has over 290 locations with more than 500 radiologists and approximately 7,300 employees, making it one of the largest in the country. Regional networks are located in New Jersey, New York, Delaware, Maryland, California, Florida, and Rhode Island.