GE Healthcare

SILENT SCAN

Humanizing the MR experience.

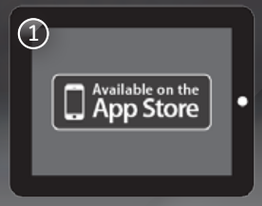
AMIDST THE SILENCE, WE HEARD THE PATIENT.

Humanizing MR isn't just our philosophy. It's our promise. Our promise to change how patients feel, see, hear and experience MR for the better. We've already changed the way patients feel during an MR scan by introducing our Discovery* MR750w and Optima* MR450w wide bore systems with the GEM Suite of lightweight, flexible coils. And we've also changed the way patients see MR through the system's award-winning design and the Caring MR Suite sold by PDC Facilities. However, addressing sound has quickly become a top priority for improved patient comfort especially since 30 percent of all MR exams are neurological scans where the patient's head is positioned inside the bore. Now is the time to break that silent barrier and change the way patients hear MR forever.

Introducing Silent Scan. Using a unique combination of innovative technologies, we've made MR as silent as a whisper. The day when your patients can undergo a neuro scan without feeling anxiety brought on by the acoustic noise of a typical exam is here. And we've accomplished this while still providing the excellent image quality you need to make a confident diagnosis.

It's time to hear the difference.

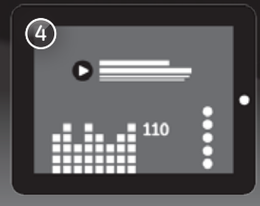
Experience Silent Scan enhanced content



Download the Silent Scan app from the App Store℠

Look for the enhanced content icons in brochures, ads and at trade shows

Capture the icon using the Silent Scan app



Enjoy your enhanced content!

HEAR THE NEW SOUND OF PATIENT COMFORT.

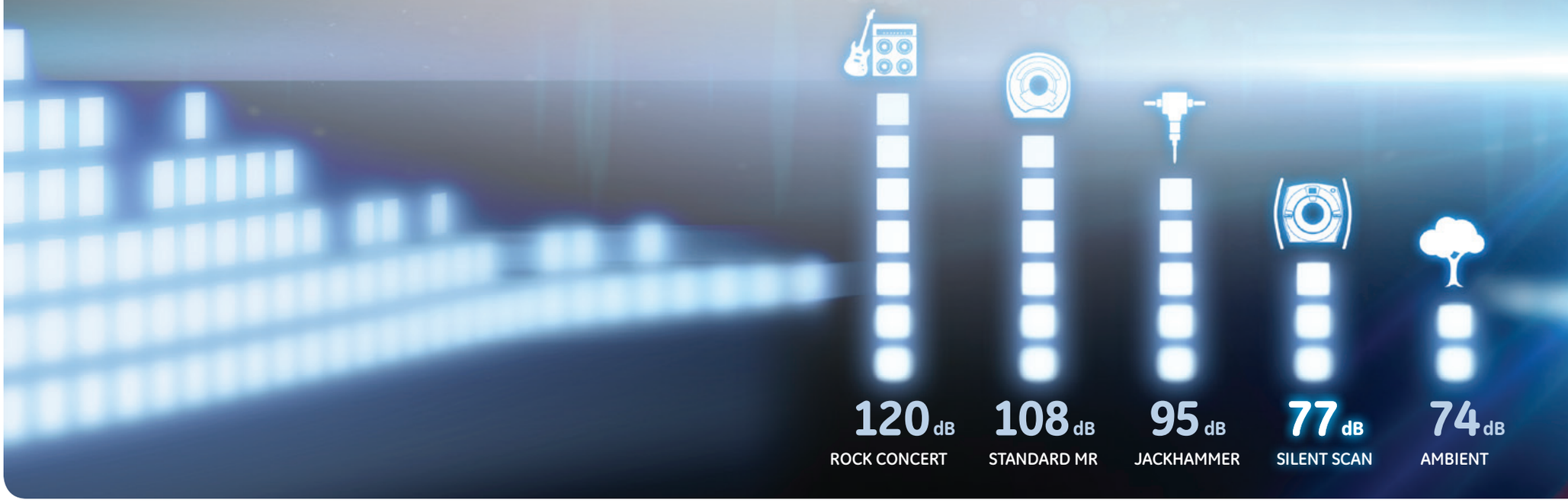
While there's no questioning its clinical utility, MR still faces the same challenge it did at its inception. MR is loud. Just how loud though? Patients have compared a typical MR scan to a jackhammer, a speeding freight train or sitting in the front row of a rock concert. That means patients who undergo MR scans endure noise levels above 100 decibels.

And it's not just the noise itself, but the emotional impact it has on patients that can have a detrimental effect on clinical outcomes. For those unfamiliar with MR, this noise can be a surprise. Patients can sometimes think something is wrong with the system or worry they won't be able to hear the technologist's instructions. This unwelcome anxiety can disrupt scan preparation, lead to extended scan times and ultimately result in a difficult experience for the patient.

This challenge led us to completely change the way patients hear MR. It led us to Silent Scan.

So just how quiet is Silent Scan? Remarkably, it's similar to what you hear sitting in a quiet room in your own home or on a peaceful walk through a nature trail. In fact, that's how we engineered it. We wanted Silent Scan to be as quiet as the ambient sound of the scan room. And we succeeded. The sound patients hear when they first walk in is so close to what they'll hear when the Silent Scan acquisition begins, there's no more than a three-decibel difference. That level of quiet has been unheard of in MR, until now. Peace of mind takes on a whole new meaning when your patients are finally able to relax and hear themselves think.

But to truly appreciate the difference, you'll need to hear it for yourself.



Silenz

Silenz is a novel data acquisition method in which the gradients are used continuously, but are not rapidly switched on or off. Since the gradients are no longer switched on and off, mechanical vibration is eliminated and no noise is generated during the acquisition. The Silenz technology acquires three-dimensional MR data, resulting in isotropic resolution. Further, Silenz has the unique advantage of a very short echo time improving image quality and signal from all tissues of interest.

① Conventional MR gradient sequence

② Silenz gradient sequence

BREAKING THE SILENT TECHNOLOGY BARRIER.

Historically, most attempts at reducing MR noise have focused on muffling or dampening the sound by adding insulation inside the MR system, modifying internal structural supports to change the natural mechanical frequency or reducing the gradient slew-rate to minimize the induced mechanical vibration. All of these methods, however, have failed to reduce noise significantly enough to really change the patient experience.

Our Silent Scan technology utilizes a different approach by eliminating the noise at the source. Since noise from an MR scanner is generated through an interaction between the MR magnetic field and the imaging gradients turning on and off, we developed three unique, breakthrough technologies that revolutionize how MR images are acquired. The result is the image quality you would expect from a conventional MR scan, with a fraction of the acoustic noise.

High Fidelity Power Electronics

Our High Fidelity Power Electronics platform helps maintain the extremely stable gradients and radio frequency (RF) required to avoid generating image artifacts during reconstruction.

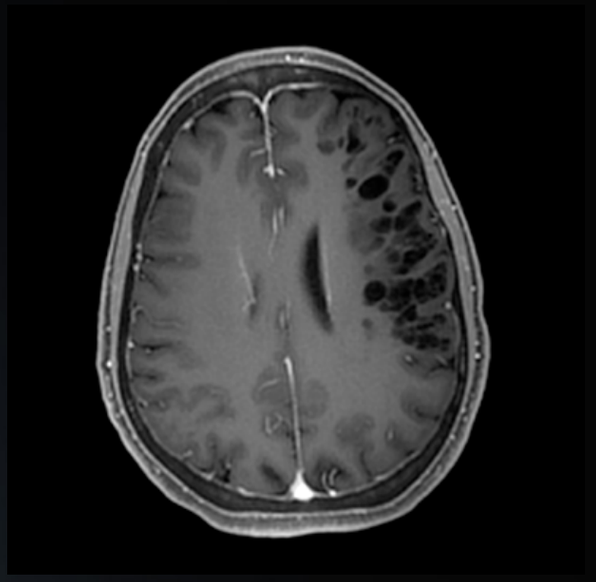
Ultra-fast RF switching capabilities

Since Silent Scan technology avoids switching gradients rapidly, it's crucial that the RF coil system be capable of switching from transmit to receive mode within microseconds to maximize signal-to-noise ratios within the images. And the GEM Suite of coils is designed to do just that.

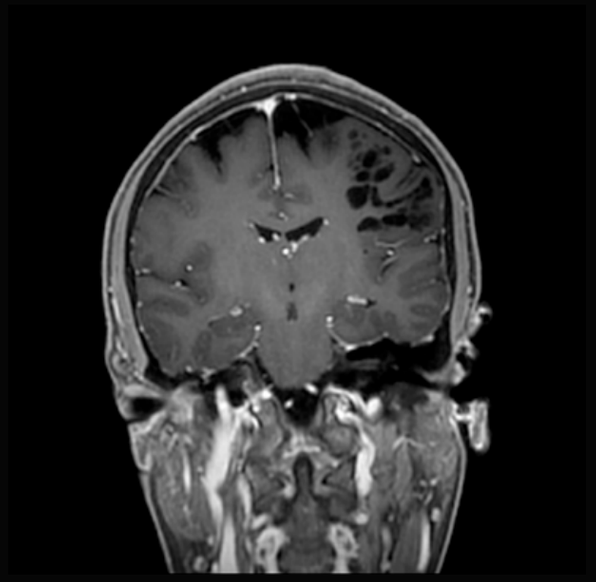
SIGHT OF SILENCE.

As your patients enjoy a quieter exam, you'll experience excellent image quality.

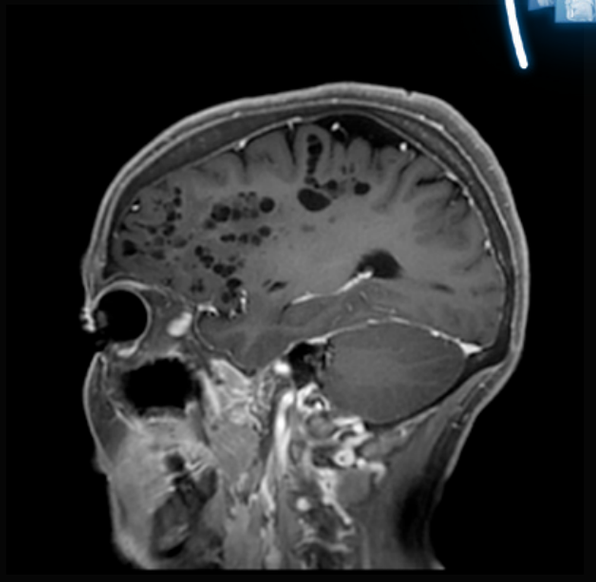
Silent Scan T1 with
3 mm Sagittal reformat



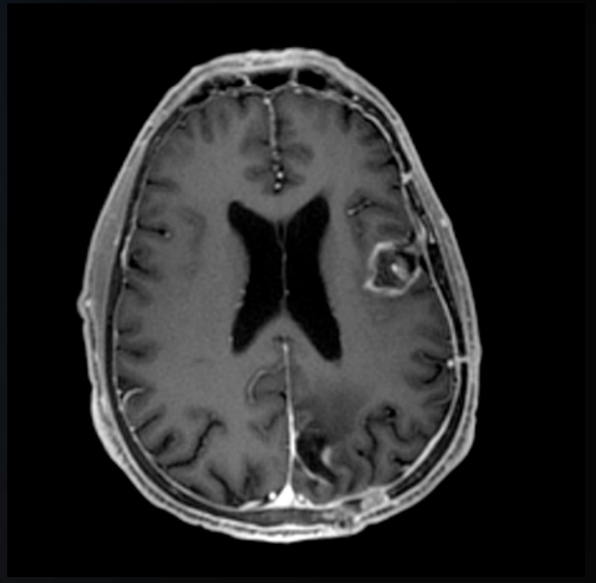
Silent Scan acquisition with
3 mm Axial reformat



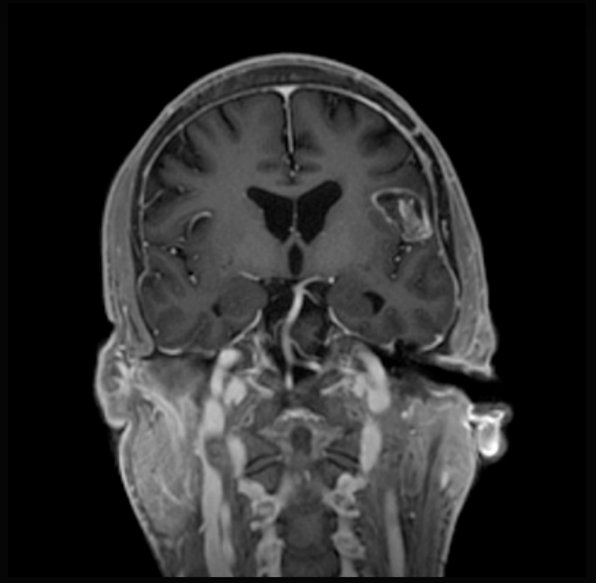
Silent Scan acquisition with
3 mm Coronal reformat



Silent Scan acquisition with
3 mm Sagittal reformat



Silent Scan acquisition with
3 mm Axial reformat



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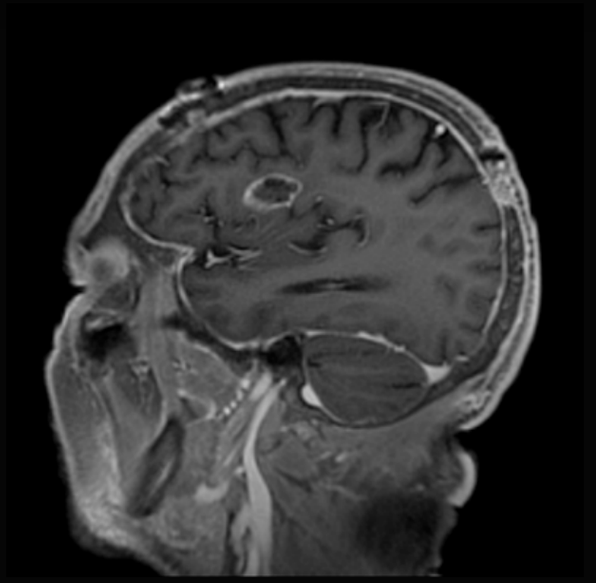
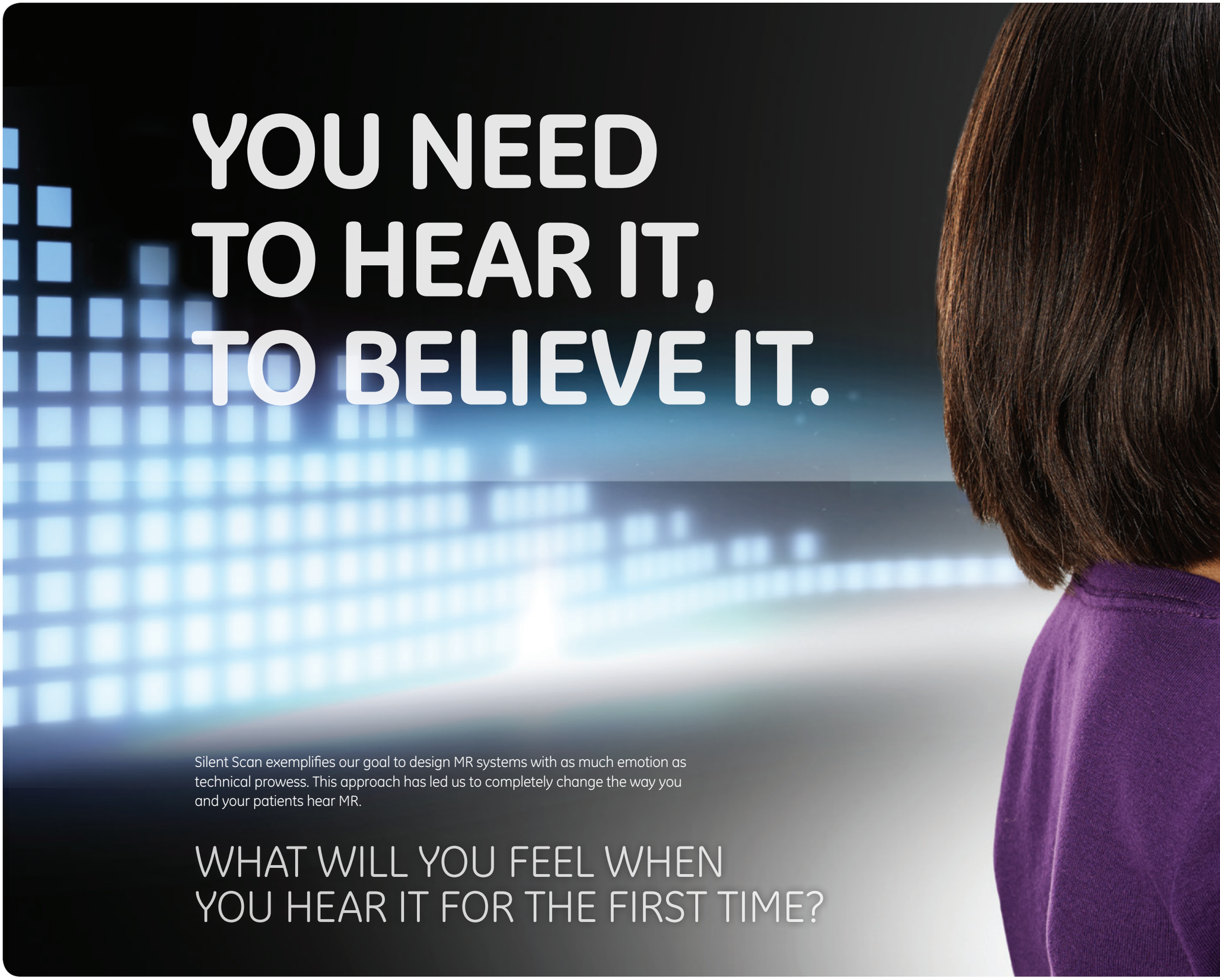


Silent Scan acquisition with
3 mm Sagittal reformat


YOU NEED
TO HEAR IT,
TO BELIEVE IT.
Silent Scan exemplifies our goal to design MR systems with as much emotion as technical prowess. This approach has led us to completely change the way you and your patients hear MR.
WHAT WILL YOU FEEL WHEN
YOU HEAR IT FOR THE FIRST TIME?

About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter - great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

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imagination at work

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