Leading the way in Ultrasound with **Breakthrough Technology**

With its exclusive Digitally Encoded Ultrasound (DEU) technology, the **LOGIQ 700 EXPERT Series** has set the pace for outstanding clinical performance. **Breakthrough 2000** enhances this advanced platform with new Coded techniques to offer you even more diagnostic information, and an even broader array of productivity tools.

**KEY HIGHLIGHTS**

- **B-Flow**, which provides direct visualization of blood reflectors, has now been expanded with new codes to further increase its clinical capabilities.
- **Pulsatile Flow Detection** lets you use color Doppler to quickly distinguish between pulsatile and non-pulsatile flow states.
- **The new i12L transducer** brings the benefits of its ergonomic design and superior image quality to vascular surgery, interventional procedures and musculoskeletal applications.
- **Virtual Convex imaging** combines an expanded field of view with the image quality of linear array technology, for more clinical information in a single view.
- **LOGIQ View** displays gray-scale and color images over an extended length of anatomy, providing even more clinical information by combining Adaptive Processing and the benefits of Digitally Encoded Ultrasound.
- **Coded Harmonic Angio** brings the benefits of our unique Coded technology to contrast-agent-enhanced flow imaging.*

Breakthrough 2000 is the latest example of GE Ultrasound’s on-going commitment to making technological innovation both clinically relevant and practical.

*Ultrasound contrast agents for radiology use have not yet received FDA approval. Therefore, product features intended for use with these agents are not available for use or sale in the United States.
'95-'96 LOGIQ Intro/Maximum Resolution
- ACE - Adaptive Color Enhancement
- Micron Imaging™
- Extended Dynamic Range
- Wide Aperture Imaging

'97 Voxel Image Processing
- Coded Excitation
- Automatic Tissue Optimization
- Tissue Harmonic Imaging
- 3D View™

'98 Digitally Encoded Ultrasound
- B-Flow
- Coded Harmonics
- Automatic Optimization
- Instantaneous, multiview 3D View
- Expanded B-Flow
- Pulsatile Flow Detection (PFD)
- i12L with Coded Techniques
- Virtual Convex Imaging and LOGIQ View
- Coded Contrast-Agent Imaging
DIGITALLY ENCODED ULTRASOUND:
Defining the future of ultrasound.
With its highly programmable encoding and decoding capability, the LOGIQ 700 EXPERT Series applies GE-exclusive coded technology to:

- Boost weak flow reflector signals
- Suppress unwanted signals and frequencies

Breakthrough 2000 expands these exclusive capabilities to further improve image quality and deliver unique benefits to new clinical applications.

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**CODED TECHNIQUE**

<table>
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<tr>
<th>Coded Excitation utilizes coded techniques to boost weak tissue signals at depth:</th>
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<tr>
<td>- Unique digital encoding is performed for each transmit pulse sequence</td>
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<tr>
<td>- Encoded sequence is extracted from background noise</td>
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<td>- Decoded return signal provides high-frequency resolution</td>
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**CLINICAL BENEFITS**

- 7-MHz resolution at penetrations up to 20-cm
- Finer detail resolution deep in the body
- Clearer visualization of deep anatomical structures

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**Resolution imaging of deep structures**

**Enhanced signal detection to improve sensitivity and control**

| GE-proprietary codes are customized for specific agents and applications |
| Codes are optimized for individual agent mechanics |
| Enhanced sensitivity |
| Increased contrast and spatial resolution |
| Visualization of small vessels typically not seen in B-mode |
| Visualization of tumor vascularity |

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**Resolution, high-frequency harmonic imaging**

<table>
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<th>Utilizes sensitivity enhancement of Coded Excitation to amplify weak blood reflectors:</th>
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<td>- Codes allow suppression of stationary tissue signals</td>
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<td>- B-Flow color enhancement further improves flow visualization</td>
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**Sensitive hemodynamic imaging**

| True hemodynamic flow visualization |
| Superior spatial and temporal resolution |
| Clear definition of vessel lumen and stenotic structure |
| Expanded applications include peripheral vascular, obstetrics and small parts |

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**Resolution, high-frequency harmonic imaging**

| Unique transmit encoding sequence tags fundamental frequency |
| Decoding allows digital separation and suppression of fundamental frequency |

**Enhanced signal detection to improve sensitivity and control**

| Enhanced sensitivity |
| Increased contrast and spatial resolution |
| Visualization of small vessels typically not seen in B-mode |
| Visualization of tumor vascularity |
The benefits of Coded Excitation are clearly demonstrated in this side-by-side liver comparison. Note the 20-cm penetration while maintaining 7-MHz resolution.

Because of its ability to simultaneously resolve flow and tissue, B-Flow has clearly made a major impact on vascular imaging.

Coded Harmonics demonstrates this thyroid mass with unusual clarity.

This large, nearly isoechoic hepatocellular carcinoma is clearly visualized with Coded Harmonics.

Tumor vessels are sharply delineated in the arterial phase of this study using Coded Harmonic Angio.

Note the excellent spatial and contrast resolution in this umbilical-cord image obtained using B-Flow and Auto Optimization.

This image of a uterine fibroid demonstrates Coded Excitation’s clinical utility.

Coded Harmonic Angio clearly characterizes the vascular nature of hepatocellular carcinoma in this contrast-agent study.
IMPROVING PERFORMANCE

Over a broad range of applications

ADVANCED TRANSDUCER TECHNOLOGY

Combining coded technology with new ergonomic designs

The **new i12L transducer** provides high-frequency resolution, advanced ergonomics, and superb anatomic access. Clinical versatility is expanded with our exclusive Coded Harmonics and B-Flow capabilities. This transducer excels in applications such as:

- Vascular surgery and interventional procedures
- Breast imaging
- Musculoskeletal imaging
- Small parts imaging

The result is unprecedented performance in clinical ultrasound’s most challenging applications.

Two new phased-array transducers expand the LOGIQ 700’s clinical capabilities to sector applications:

- The new 3Sr provides improved intercostal access, along with transcranial Doppler capability.
- The new 8S transducer provides excellent image quality and a small footprint for neonatal and pediatric imaging.

M7C AND M12L ACTIVE MATRIX ARRAYS

Exquisite detail resolution from near to far field

With Active Matrix Array transducers, GE set new standards for uniform resolution and image quality at all scanning depths. The M12L Active Matrix Array transducer was the first to apply this technology to high-frequency applications, while the M7C was the first to apply it to abdominal, pelvic and obstetric imaging.

Among the advantages:

- A uniformly thin beam from near to far field
- Deeper penetration at higher frequencies
- Outstanding resolution throughout the field of view

Uniform image quality means you don’t have to choose between near-field and far-field resolution.
Note the outstanding penetration and excellent resolution obtained in this 8S-transducer image of a cerebral hemorrhage.

The i12L transducer provides excellent utility in neonatal scanning, as this spine image demonstrates.

Conventional transducers force a compromise between resolution and penetration.

Active Matrix Array transducers provide uniform resolution throughout the entire field of view.

Combined with AMA technology, Auto Optimization provides superb resolution made evident by the detail seen in this fetal profile.

This image of a fetal head demonstrates the M7C Active Matrix Array probe’s ability to deliver excellent color sensitivity while maintaining high resolution.

Active Matrix Array technology provides excellent near-field definition and far-field resolution, demonstrated in this subtle renal mass.

Excellent anterior- and posterior-wall definition, as seen in this femoral-artery image, is the result of combining AMA technology with Coded Harmonics.
REVOLUTIONARY CAPABILITIES
To enhance your productivity

The LOGIQ 700 EXPERT Series combines unsurpassed processing power with a broad range of productivity enhancements – including Breakthroughs so innovative that you won’t find them on any other system.

AUTO OPTIMIZATION

One-touch image optimization

The LOGIQ 700 EXPERT Series offers Automatic Optimization in every mode: Colorflow, Spectral Doppler and B-mode.

Simply touch one button: There’s no need to waste time manually optimizing the image display. Auto Optimization is not a series of system presets. Its adaptive processing instantaneously analyzes actual image data from the anatomy of interest, and applies the optimum imaging parameters. The results:

◆ In B-mode, auto tissue optimization provides instant access to the best possible view of the anatomy under study.
◆ In Colorflow imaging, auto color optimization enhances sensitivity and color resolution even in tiny vessels.
◆ In Doppler mode, auto spectral optimization offers automatic adjustment of velocity scale setting, Doppler angle, and more.

VIRTUAL CONVEX IMAGING

More clinical information to speed your exam

New Virtual Convex imaging extends the field of view of your linear and sector transducers while maintaining excellent detail resolution. Combined with GE’s exclusive coded techniques, this capability provides:

◆ 20% more clinical information than a typical linear array transducer can
◆ Increased productivity

Virtual Convex imaging is particularly useful in vascular, thyroid and testicular imaging, allowing complete measurements to be obtained in a single image.
Expanding your field of view

The LOGIQ 700 EXPERT Series utilizes the power of adaptive processing for expanded field-of-view imaging. LOGIQ View allows you to:

- Capture an expanded length of anatomy in each view, in all imaging modes – gray-scale, color Doppler, power Doppler and B-Flow.
- Quickly establish anatomical frames of reference and obtain measurements.
- Use advanced EXPERT Series imaging capabilities such as Coded Harmonics for superior imaging over an extended field-of-view.

3D View Imaging

Quickly generating new diagnostic information

3D View instantly generates displays that conventional ultrasound can’t provide – including surface renderings, rotating volumes and slices in any plane.

Pulsatile Flow Detection

Speeding exams with automated display of flow pulsatility

Using adaptive processing to perform real-time analysis of flow dynamics, Pulsatile Flow Detection (PFD) creates a graphical representations of relative pulsatility. This unique tool streamlines exams by:

- Instantly displaying relative flow pulsatility
- Easily differentiating between pulsatile and non-pulsatile flow.
- Facilitating rapid placement of the Doppler sample volume
- Easily identifying pulsatile flow and providing vessel differentiation.
Four active probe ports with automatic activation make probe selection as easy as picking up a telephone.

A high-resolution progressive scan monitor automatically adjusts to ambient light for optimum viewing.

Convenient bay for peripheral devices
Helping you efficiently
MANAGE IMAGES AND DATA

With the new LOGIQ 700 EXPERT Series, you’ll be able to take advantage of an array of productivity enhancements.

ADVANCED INFORMATION MANAGEMENT

◆ **Onboard image archiving** minimizes the time you spend on image management.

◆ **Extensive calculations packages** include not only **Doppler auto-tracing** calculations, but also vascular and obstetrics packages – complete with fetal trending – to speed exam evaluation.

◆ **Advanced Patient Management package** offers sophisticated Patient Data Output and Line Printer Report support.

◆ **InSite™ remote diagnostic services** helps ensure ultra-fast troubleshooting, repair and applications assistance, to keep your department running smoothly.

◆ **DICOM 3.0 compatibility** provides print, store, worklist and multi-frame loop capabilities to connect anywhere, anytime.

◆ **GE RadWorks’ PC-based PACS compatibility** promotes easy, affordable, and highly scaleable distribution of exam data throughout your enterprise and beyond.
Another diagnostic-imaging Breakthrough from the company known for **INNOVATION AND SUPPORT**

The **LOGIQ 700 EXPERT Series** is just one more example of the Breakthroughs evolving annually from the scientists and clinicians at GE Ultrasound – a Breakthrough designed to provide you with unmatched clinical utility, image quality, and department-wide productivity.

And like all our imaging systems, it’s backed by complete GE support. Comprehensive on-site and on-going training, for instance, including access to our innovative educational materials. Continuing SDMS credits in the USA through [geultrasound.com](http://www.geultrasound.com). Affordable financing. Unsurpassed service, both on-site and via our pioneering InSite™ remote diagnostic service. And the security of knowing that your system is designed for Six Sigma, a philosophy of achieving world-class performance by meeting our customers’ expectations.

**Investment security**

GE Medical Systems is a world leader in diagnostic imaging products and support. For more than 100 years, healthcare providers have relied on GE for high-quality imaging technology, services and productivity solutions.

No matter what challenges your healthcare system faces, you can always count on GE to help you deliver care of the highest quality.

**Ask your GE representative for details today.**

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