

Focusing on sustainability in ultrasound



Invenia™ ABUS Premium



GE HealthCare

Creating a more sustainable future requires us to care for the planet and its inhabitants

It is essential that we continue to drive progress toward early, precise, and accessible diagnosis and treatment of more patients. For the planet, it is critical that we do so with a reduced impact on precious and rare resources that are imperative to life. We believe that the advancement of precision medicine, greater digitization of healthcare, and increased access to quality care are fundamental to accomplishing this goal.

We support carbon policies that reduce greenhouse gas emissions and promote sustainable development. GE HealthCare has a goal to achieve net zero by 2050. An interim goal is to reduce our operational emissions (Scope 1 and 2) by 42%* and our Scope 3 emissions from purchased goods and services, upstream transportation and distribution, business travel, and use of sold products by 25%** by 2030 compared to a 2022 baseline. In 2024, we received validation on our updated goals from the Science Based Targets initiative (SBTi), a group of visionary corporate leaders taking ambitious climate action. As a result of these efforts, we want to enable a more sustainable health system by addressing not only the environmental impacts of our products but also the challenges healthcare professionals and their patients face with resilient, digital solutions.



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* From a 2022 baseline year.

** Includes purchased goods and services, upstream transportation and distribution, business travel, and use of sold products from a 2022 baseline year.

Leading a new era in sustainability for a more resilient tomorrow

We're creating a world where healthcare has no limits, helping to improve access to care and enable better patient outcomes.



Environmental

Using fewer resources for a healthier planet.

Digital

Transforming healthcare through innovation.

Resilience

Building flexibility and dependability across healthcare systems.

Invenia ABUS Premium helps create a more sustainable tomorrow

Our Invenia ABUS Premium ultrasound and its services help ensure clinicians and the patients they serve have the technology necessary to create a more sustainable and resilient tomorrow.

Reducing environmental impact

- The Invenia ABUS system is designed to be refurbished, reused, or recycled at the end of its product life to minimize unnecessary waste.

Improving care

- This system is the first FDA approved ultrasound technology for cancer screening in women with dense breasts.
- Multiple studies have demonstrated the clinical power of ABUS in dense breasts to find mammography occult, invasive cancers at an early stage^{1,2} with the potential to reduce unnecessary biopsies.³
- Invenia ABUS Premium features new integrated Verisound™ AI* and AI Assistant**, which ensure faster and reproducible scanning and reading with extraordinary image quality.



¹ FDA PMA P110006 summary of safety and effectiveness.

² Brem RF, Tabár L, et.al. Radiology. 2015 Mar; 274(3): 663-73

³ Wenhui Ren et. al, Elsevier Acad Radiol 2023; 30:S114–S126.

* Verisound AI tools include Scan Quality Assessment and Auto Nipple Detection

**AI Assistant available third-party tools include QVCAD,™ Koios DS™ Breast, BU-CAD™ and MONCAD ABS.

Contributing to a healthier planet

More than half of the healthcare sector’s climate footprint, approximately 53%, is attributable to energy use.⁴ As a result, we have strengthened our commitment to environmentally conscious design and we are implementing more sustainable practices across our product manufacturing, sourcing, distribution, installation, and service operations. This includes improving energy efficiency, optimizing the use of limited or rare materials, providing digitally enabled service throughout the product lifespan, and offering refurbishment and recycling options at the end of product life.

GE HealthCare environmental management system is ISO 14001 certified	Our production and service operations align to ISO 14001 standards.
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We’re committed to environmental product design	This product conforms with IEC 60601-1-9.
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⁴Health care climate footprint report | Health Care Without Harm (noharm-uscanada.org), based on 2019 report

Materials

GE HealthCare reviews the environmental aspects of the material supply used within our products to increase recyclability and decrease the use of hazardous substances, when possible.

Recyclability	We’re committed to high recyclability and reuse of products when possible.
	The Invenia ABUS Premium contains more than 53% recyclable aluminum and steel. Steel: 16% Aluminum: 37%
Reduce the use of hazardous substances	Compliant to EU RoHS directive 2011/65/EU REACH (EC) 1907–2006 Compliant to EU RoHS directive 2015/863/EU

Packaging

GE HealthCare imaging equipment has a robust and multi-sourced supply chain for systems and spare parts across our product portfolios.

Improved packaging	Packaging material is recyclable.
Product transportation	Truck transport: 32% Air transport: 68%



Manufacturing

Through our environmental reviews, we also focus on implementing more renewable energy and reducing waste, when possible.

Renewable energy

The Invenia ABUS Premium is manufactured at two sites: Phoenix, Arizona and Wuxi China. Our site in Wuxi, China has recently installed a rooftop solar system designed to generate 100M kW·h per year.

The Wuxi site features energy-efficient air conditioning and a smart energy management system, which is designed to continuously reduce energy consumption by 90%.

Reducing electricity

Prior to the addition of the rooftop solar system, ultrasound manufacturing at the Wuxi manufacturing facility required 876,376 kW·h. The solar-generated energy should reduce that by about 18%, or 100M kW·h per year.



Product utilization

Our imaging products are designed to help enable energy efficiency through dedicated features and advanced applications to reduce the environmental impact. Ergonomic design can help to enhance health and potentially reduce environmental impacts, such as reducing waste and saving energy.

Ergonomically designed

Reduce staff burden

Invenia ABUS Premium is ergonomically designed to support repetitive use.

Display Arm Motion:

- Extension arm horizontal range: 340°
- Elbow joint horizontal range: 276° +/- 10°
- Display joint vertical range (tilt range): 75° (5° forward, 70° back)

Scan Head Motion:

- The easy-to-handle scan head dimension is 30x30x8 cm.
- The easy-to-adjust scan head can be positioned between 27 inches to 46 inches in height.
- The scan arm can move freely with less than 6 pounds of force required to move up and down and less than 1 pound for rotation.
- An automatic control mechanism is in place to help the user maintain the position of scan head.
- An automatic probe movement mechanism helps to avoid user moving the probe manually in diagnosis.

Reduce energy consumption

Instructions are provided for use of the equipment to minimize the environmental impact during installation, use, and operation.

After 10 minutes with no activity, the system will enter screensaver mode automatically.

End of product life

We are increasingly putting our retired products' materials back into the supply chain to maximize efficient use and minimize unnecessary waste. This circularity model enables our imaging products to extend their clinical impact through longer lifespans while reducing the environmental footprint. Additionally, we offer our customers support for upgrades and services throughout a product's lifespan, when available, to maintain optimal performance and help drive better patient outcomes.

Our refurbishment programs involve an extensive inspection and testing process, designed to bring equipment back to its original certified manufacturing specifications. If the system is not suitable for refurbishment, eligible parts are harvested for reuse after quality and performance testing, while the remaining parts are returned to dedicated recycling facilities.

Product utilization

Guidance for end of lifecycle	Equipment instructions are provided to minimize the environmental impact for disposal or recycling.
Power consumption	Off-mode: 0 W Standby mode: 250 W Scan mode: 310 W
Carbon emissions	There are zero direct carbon emissions at place of use.
Parts harvesting and refurbishment options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions.	Ultrasound system parts are eligible for assessment at the appropriate time in the lifespan, for refurbishment, harvesting, or recycling. ⁵ 94–96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product. 100% of Invenia ABUS consoles are eligible for refurbishment. 100% of parts are harvestable for spare parts.
Waste reduction	This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

⁵ Products within ultrasound are eligible for refurbishment, although whether a system is actually refurbished versus harvested for parts or otherwise recycled or reused, is dependent on the state of the system when GE HealthCare takes possession of it. Data on file.

Digitizing healthcare through transformative innovations for a more resilient tomorrow

We are committed to investing in digital capabilities that help accelerate clinical decision making, optimize imaging operations, and drive efficiencies in exam workflows, all of which can improve patient outcomes. Enabling digital transformation will further enhance our predictive and maintenance service operations for the life of your products.

We are also dedicated to driving a more resilient and sustainable future in healthcare. Many factors, including the pandemic, climate-related weather disasters, and supply-chain issues amplified this need. Managing operations through these challenges requires resilience and perseverance.

Helping clinicians advance patient outcomes

Advanced applications and cutting-edge AI tools provide personalized data to drive actionable insights, helping healthcare professionals make fast, accurate clinical decisions for breast care pathway.

Gain actionable clinical insights for quicker decision making

Standardized 3D breast volume data allow for multilayer analysis using the coronal plane and AI technology.

The novel Reverse Curve™ transducer ensures a full breast contact for comprehensive coverage, improving image quality* and increasing diagnostic confidence for reading ABUS exams, while offering outstanding patient comfort.

cSound™ Imageformer produces excellent, reproducible images by leveraging automatic focus at every pixel

Auto Prior Compare allows physicians to easily compare a region of interest to prior exams.

The integration of AI Assistant** for enhanced review of ABUS 3D datasets seamlessly integrates intelligent algorithms to assist in detecting and characterizing breast lesions.

- Koios DS™ Breast automatically provides an AI-based quantitative risk assessment that aligns to a BI-RADS® category with a potential reduction in benign biopsies of up to 55%.⁶
- Experience up to 93% sensitivity for lesion detection with QVCAD™.⁷

⁶ L. Barinov et al., "Impact of Data Presentation on Physician Performance Utilizing Artificial Intelligence-Based Computer-Aided Diagnosis and Decision Support Systems," *Journal of Digital Imaging* 32, no. 3 (June 2019): 408–416, <https://doi.org/10.1007/s10278-018-0132-5>

⁷ S. Yang, et al. "Performance and Reading Time of Automated Breast Us with or without Computer-aided Detection." *Radiological Society of America* 292, no. 3 (2019): 540-549. Read More: <https://pubs.rsna.org/doi/10.1148/radiol.2019181816>

* Compared to Invenia ABUS 2.0

** AI Assistant not available in all regions.



Helping clinicians advance patient outcomes

Keep your imaging equipment up to date with advanced clinical applications

Invenia ABUS Premium updates are offered via eDelivery* or disk on key.

Help improve patient outcomes with improved image quality

The cSound Imageformer advancement transforms processing from hardware-based to software-based, producing exquisite image quality by automatically creating focus at every pixel and resulting in consistent, high-resolution image quality and reproducibility from user to user.

The gentle shape of the 15.3 cm Reverse Curve transducer follows the breast's natural contour for outstanding patient comfort and full contact, ensuring comprehensive coverage and extraordinary image quality, which leads to a high degree of diagnostic confidence for reading ABUS exams.

Three selectable compression levels provide personalized comfort during the exam while also gaining optimal image quality.

*eDelivery only available on Invenia ABUS Viewer in certain regions. Please contact your GE HealthCare representative for more information.



Optimizing imaging operations

Our AI-based and advanced digital solutions are designed to increase efficiencies across the radiology spectrum without increasing the administrative and training burden on radiologists and technologists.

Increase productivity and consistency

As scanning and reading are separated, the system provides the ability to perform remote viewing of images via DICOM® 3.0 compatible output.

The remote service platform InSite™ connects you with a GE HealthCare Online Service Engineer or Applications Support Engineer. It has remote diagnostics capability as well as the ability to request service.

Reduce downtime

InSite allows GE HealthCare to deliver remote diagnostics capability and is your direct link with a GE HealthCare Online Service Engineer or Applications Support Engineer. Request for Service via the InSite link. Available in some markets.

The Mobile Invenia ABUS solutions let you bring extraordinary patient care to more places with the Mobile ABUS Fixation Bracket*

Cybersecurity

GE HealthCare's Design Engineering Privacy and Security (DEPS) process follows GDPR, HIPAA, NIST 800-53, NIST 800-30, ISO 27001, and NIST CSF requirements.

*The Invenia ABUS device is not designed for use in a mobile environment unless it is installed using the Mobile ABUS fixation system.



Enabling intelligent, patient-friendly exam workflows

Intelligent features help to drive consistency, enable fast, and easy exams, prioritizing the patient experience and improving workflow productivity.

Reduce setup time

Users can easily access patient information from an external Worklist Server.

Customizable scanning protocols allow the user to optimize the ABUS exam in the most efficient way

Reduce scanning and reading time

Verisound AI-powered solutions enhance confidence and speed workflow

- Scan Quality Assessment provides an immediate qualitative evaluation during the exam for proper breast coverage and positioning.
- Auto Nipple Detection automatically offers the positioning of the nipple marker to enable consistency within the breast volumes to speed up the overall exam time.

Fast scan increases scan speed by 40%*

Invenia ABUS separates acquisition from interpretation to facilitate efficient and effective breast screening. Read entire case in less than 3 minutes.⁸

- QVCAD** on the Invenia ABUS Viewer helps to improve reading efficiency by reducing reading time by 33%.⁹

⁸ A. Huppe Ashley et.al, "Automated Breast Ultrasound Interpretation Times — a reader performance study" Academic Radiology 2018 DOI: <https://doi.org/10.1016/j.acra.2018.03.010>

⁹ Y. Jiang, et al. "Interpretation Time Using a Concurrent-Read Computer-Aided Detection System for Automated Breast Ultrasound in Breast Cancer Screening of Women With Dense Breast Tissue." American Journal of Roentgenology 212, no. 2 (May 24, 2018): 447–455. <https://doi.org/10.2214/AJR.18.19516>

* Compared to Invenia ABUS 2.0

**QVCAD not available in all regions



Enabling intelligent, patient-friendly exam workflows

Ease of use

Icon-driven scanning protocols and single-button volume acquisition make the system easy to use.

Cleanability

Our equipment is designed to be cleaned and disinfected easily. We continue to test and approve new cleaning and disinfecting agents. Visit [Cleaning.GEHealthCare.com](https://www.gehealthcare.com/cleaning) for updates.



Creating a healthy world to help enable better patient outcomes.

GEHealthCare.com/about/sustainability

Not all products or features are available in all geographies. Check with your local GE HealthCare representative for availability in your country. Commercial availability of GE HealthCare medical systems is subject to meeting local requirements in a given country or region. Not all features are included in the standard system configuration. Contact a GE HealthCare representative for more information. Intended for healthcare professionals only.

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