



Excellence. Day after day.

Definium™ 646 HD X-ray system powered by Helix™ 2.0

Definium 646 HD is a commercial configuration of the Optima XR646 HD







Definium 646 HD
powered by Helix 2.0

Optimize your X-ray experience
with versatility, speed, and
precision for all your patients.

Definium 646 HD is a versatile digital radiographic system that enables diagnostic confidence and workflow efficiency with multiple configurations that adapt to your needs.



Get the diagnostic clarity you need from that first X-ray

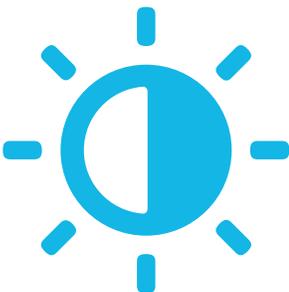
Helix™ 2.0 advanced image processing leverages artificial intelligence (AI) in image quality to deliver sharp detail and consistent performance in X-ray—despite variations in exposure technique and challenging exam conditions.



Available in three levels of enhancement. Local Contrast Enhancement delivers improved contrast for chest images, which helps in spine visualization and lung detail.



Detail Preserving Noise Reduction delivers significant noise-reduction capabilities, while minimizing the effect on fine details. Provides adaptive noise reduction based on the noise in the image and has three levels of reduction available.



AI automation delivers consistent brightness and contrast across images, regardless of variations in dose, patient positioning, field of view, and metal implants.



Up to 40% increase in detectability* harnessing the ultra-high resolution and dose efficiency of FlashPad™ HD.

* Source: GE whitepaper: High resolution for improved visualization (DOC2045904).
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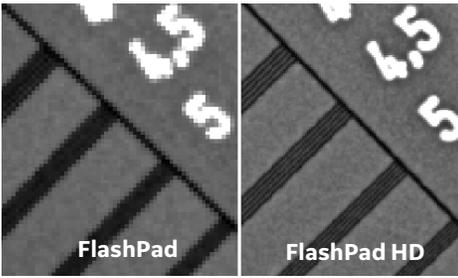
Don't miss a thing

Extraordinary anatomical detail at low dose in every X-ray image.

Helix 2.0 advanced image processing algorithms harness the full high-resolution power and exceptional dose efficiency of FlashPad HD detectors to deliver outstanding clarity and extraordinary anatomical detail where it matters most.

Double your resolution

Resolution test pattern image



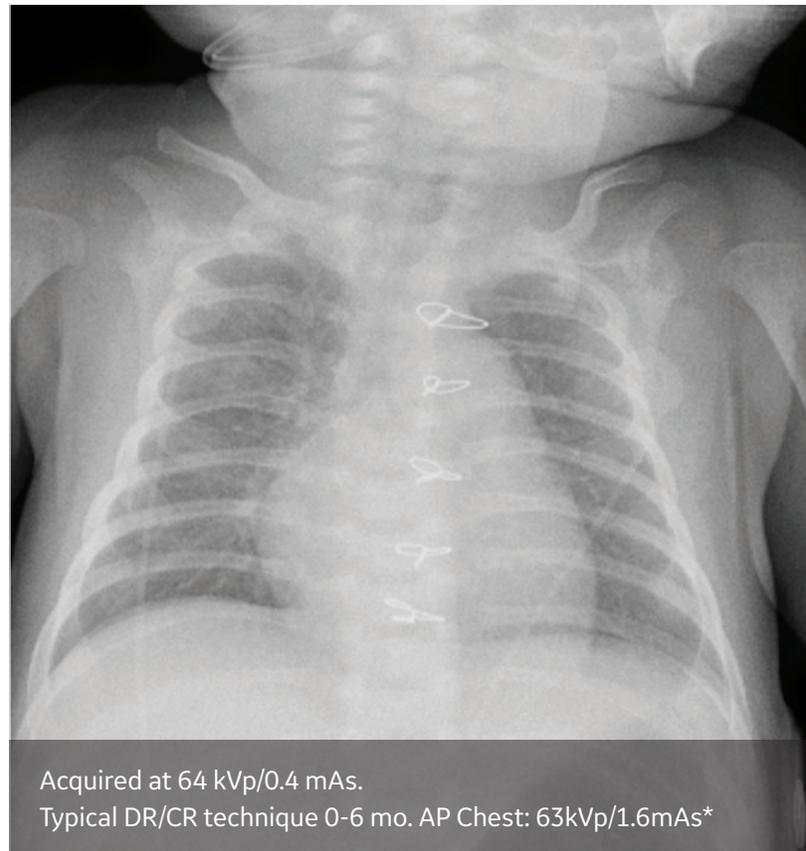
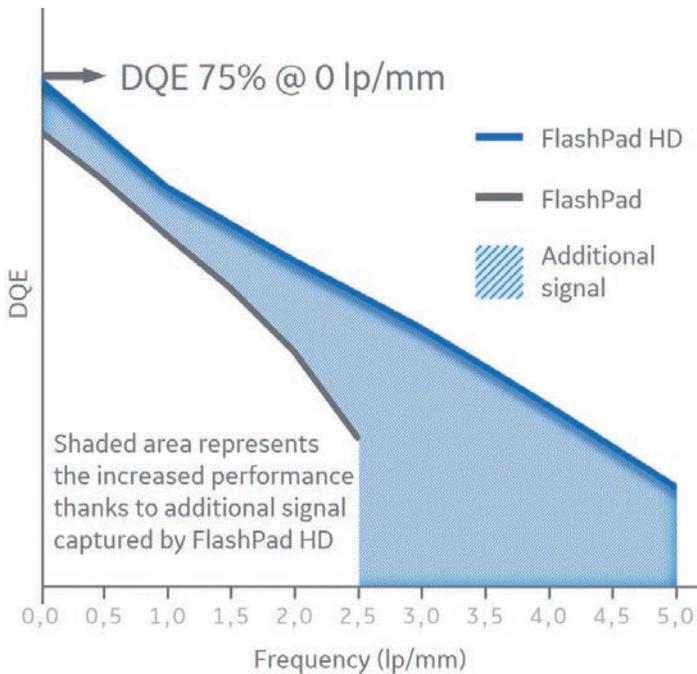
The **FlashPad HD** detectors pack four times more pixels per area for sharp X-ray images. Plus, they capture extraordinary anatomical detail at low dose. Available in 10" x 12", 14" x 17" and 17" x 17" standard cassette sizes.



5 lp/mm resolution
100 micron pixel pitch

Exceptional dose efficiency for your tiniest patients (and the largest ones too)

The ultra-high dose efficiency helps enhance diagnostic imaging quality at low dose for all patient types.



Consistent performance and presentation despite challenging exam conditions

Helix 2.0 delivers consistent brightness and contrast across variations in dose exposure with Smart Windowing and enhanced contrast restoration.

Without Helix

~0.25 mAs



~2 mAs



~16 mAs



With Helix

~0.25 mAs



~2 mAs

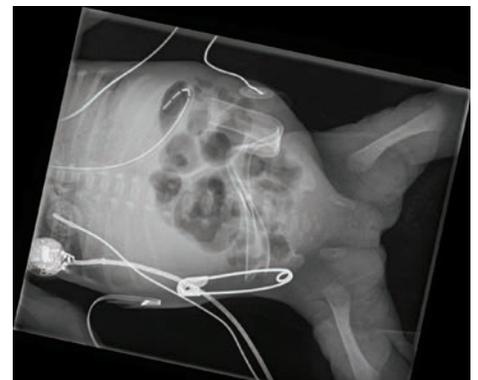
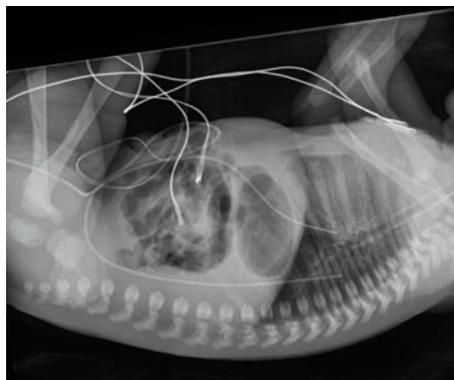


~16 mAs



Consistent performance despite variations in collimation and patient positioning with Helix 2.0

Intelligent collimator edge detection with outstanding accuracy in pediatric applications.



Excellent handling of metal implants

Clear bone-metal interface without halo artifact.



We know speed and efficiency matter





Helix workstation

The supplemental Helix workstation allows a technologist or a radiologist to edit and reprocess images without system impact, keeping the system available for patient exams. It also provides a central location to perform quality control by physicists and technologists for exams needing reprocessing.



Fast and easy X-ray exams, effortless patient positioning

AutoGrid Suite offers an extensive set of automation and workflow enhancing features, to make exam setup fast, intuitive, and easy for X-ray technologists and comfortable for patients.



New user interface

Redesigned navigation and **QuickTools** for fewer clicks and intuitive operation



QuickCharge

Detector charging in the table and wall stand bucky



Auto field-of-view

Predefined collimation sizes for each view



Auto protocol assist

Automatic selection of anatomy and technique based on modality work list



Auto-tracking

Maintain SID and tube-detector alignment with table and wall stand receptor automatically



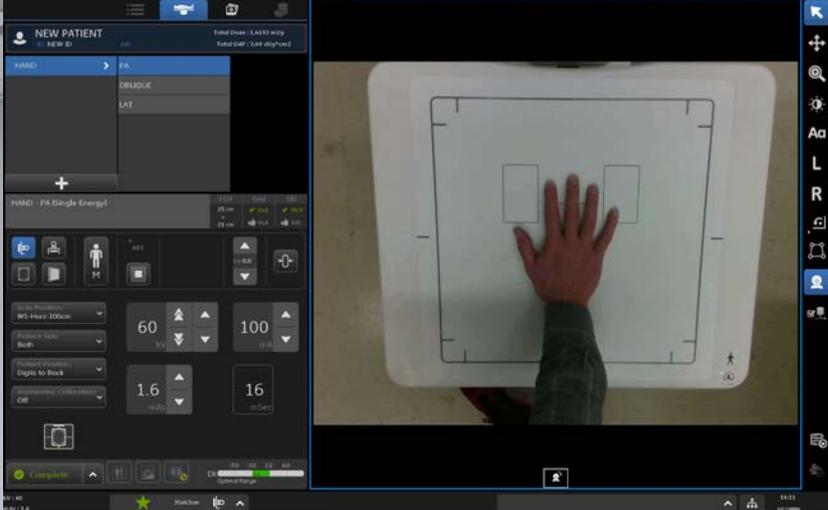
QuickShare

Hassle-free sharing and pairing of multiple wireless detectors



QuickConnect

Automatic wifi channel switching to avoid wireless interference



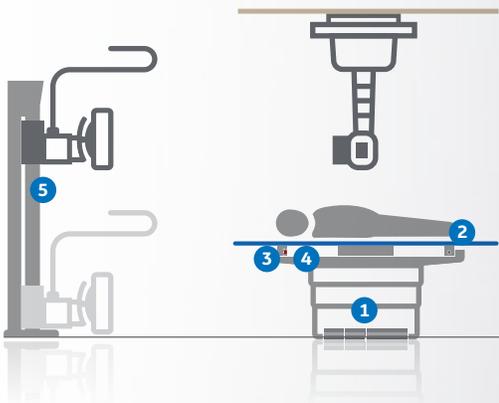
Live Streaming Patient Video

The Definium 646 HD with live streaming patient video keeps technologists' eyes on the patient for a greater portion of the exam, helping to monitor patient safety and potentially reduce rejects that stem from patient motion.

- User interface puts the camera view front and center
- At the time of image preview, the camera view moves to a smaller area of the screen
- Streaming window can be maximized (1140x1140) or minimized (320x240)
- 720p HD resolution
- 30 frames per second

Your patient's safety, comfort, and dignity in mind

A bariatric X-ray table capable of supporting up to 400 kg/82 lbs* that lowers to 50cm/20 inches.



Extensive Patient Safety Features

1. Double-tap safety foot pedals (table and wall stand)
2. Safety switches to disable motion during patient transfer
3. Two emergency stop buttons
4. Anti-collision and anti-pinch sensors on table, wall stand, and ceiling suspension
5. Electromagnetic brakes securing vertical motion of wall stand

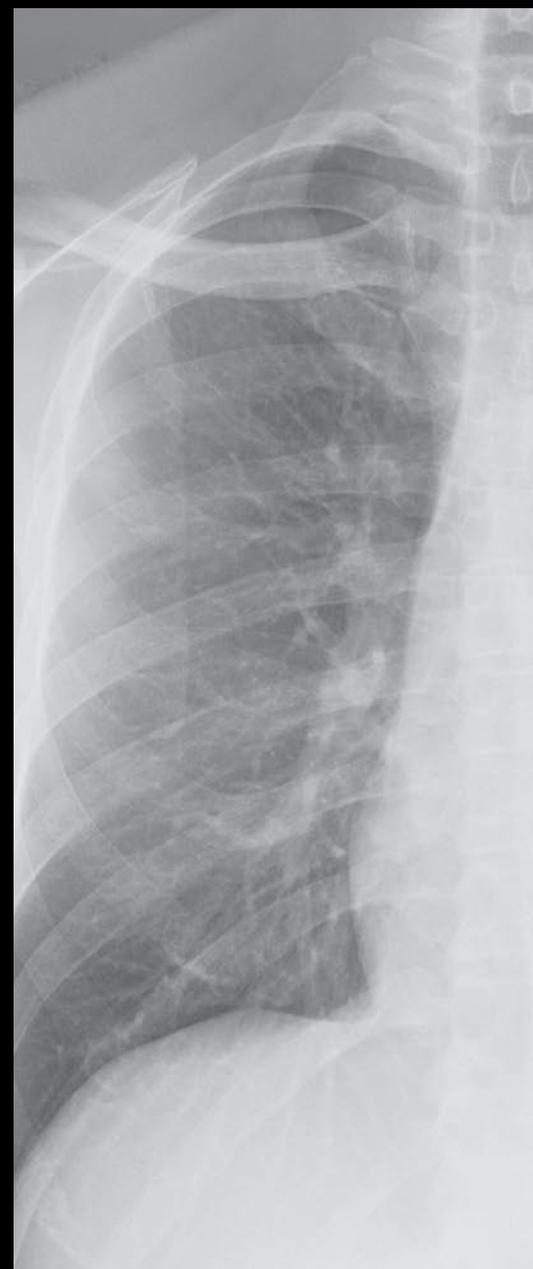
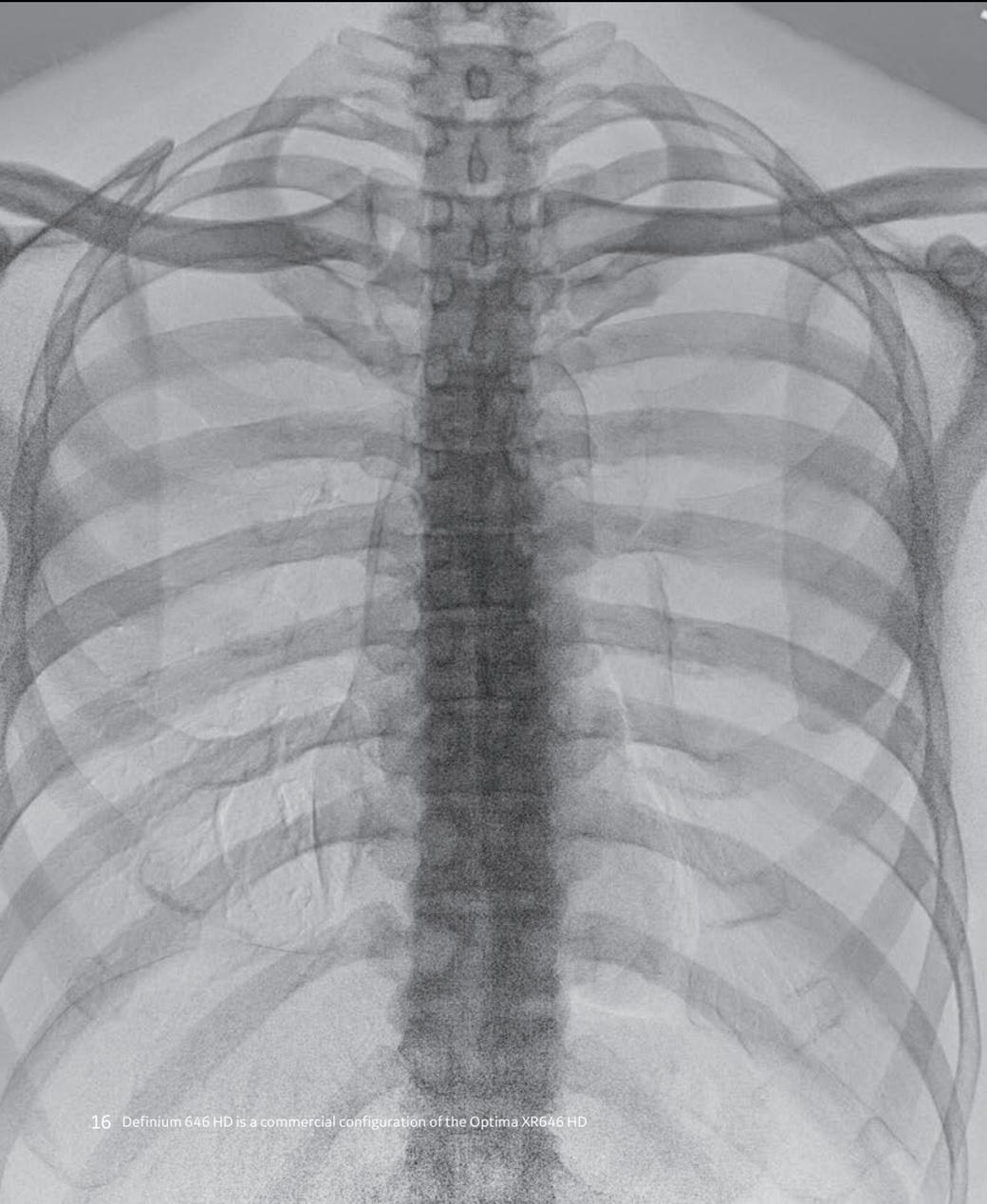
* Table weight limit: 400 kg/882 lb static and 320kg/705 lb dynamic (elevating).





Dual Energy Subtraction

Dual Energy Subtraction moves beyond image processing to create bone and soft-tissue images based on the physical interaction of the X-rays with the anatomy.



Improved assessment of chest pathology

Dual Energy Subtraction enables physicians to remove the bones from a PA/AP chest image leading to the detection of abnormalities in the soft tissue that may have been obscured by bones in a conventional radiograph.

See more than in a standard radiograph

The bone image is powerful on its own, enabling the radiologist to more clearly visualize calcified information for a given abnormality.

Reduced opportunity for patient movement

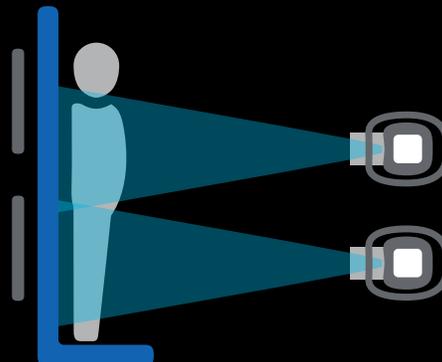
Dual Energy acquisition of two images is taken 160 milliseconds apart.

In less than a few seconds, Dual Energy Subtraction can help to eliminate obstructions from overlying bones while providing additional information on calcifications in chest studies.



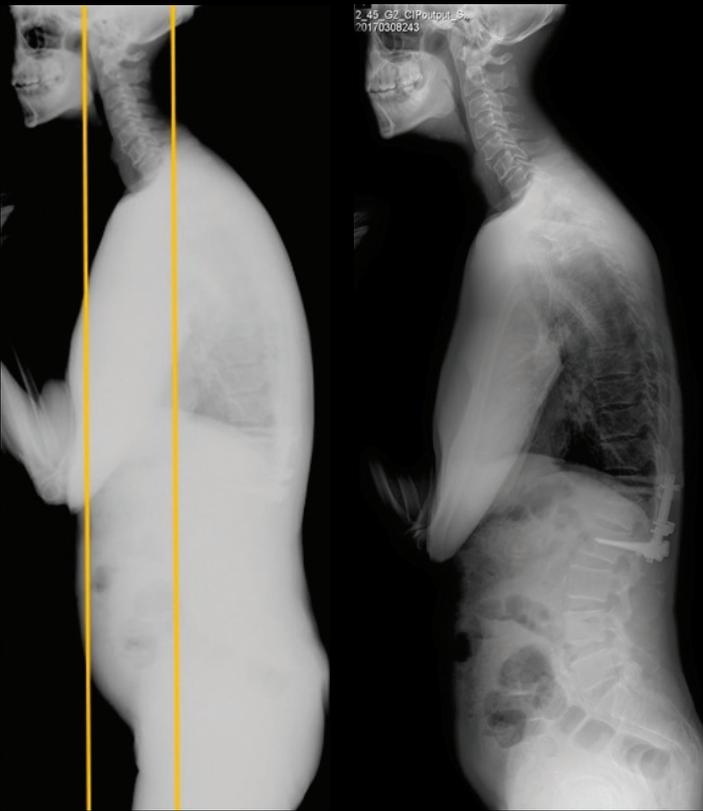


Auto Image Paste Long bone and spine imaging at the wall stand

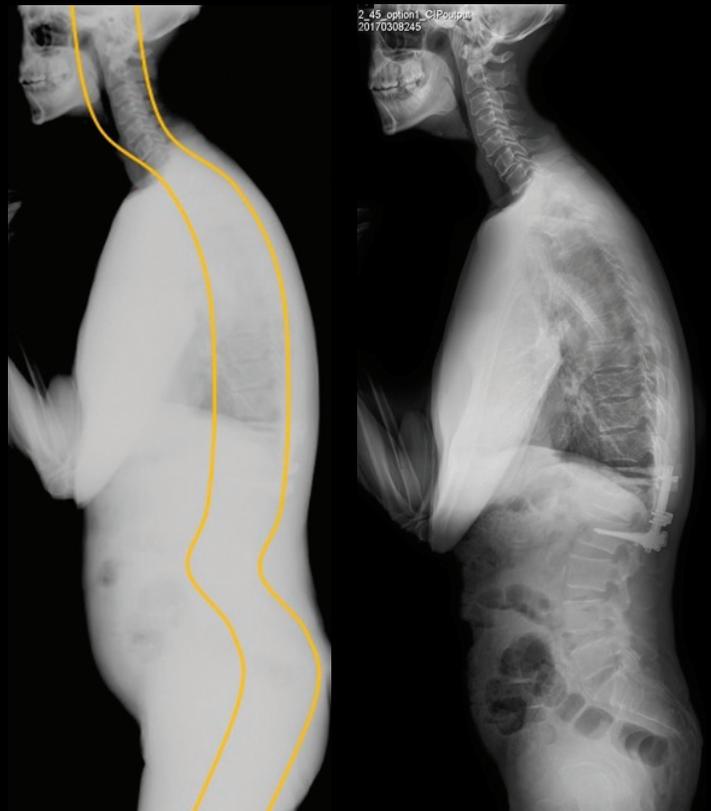


Auto Image Paste
at wall stand

Without AutoSpine



With AutoSpine



Auto Image Paste has been enhanced with AutoSpine—an intelligent pasting algorithm that follows the contour of the spine for vertical equalization—enabling a natural balance of brightness and contrast along the patient body.



Data isn't just about looking backwards—it helps you plan the future.

X-ray Quality Application

Identifying root causes and enabling action.

Definium 646 HD is compatible with GE Healthcare's X-Ray Quality Application which is built upon the Edison Platform.

X-Ray Quality Application is an **on-premise enterprise solution** which automatically collects, aggregates, and reports quality assurance data to tackle X-ray rejects, exposure/deviation indices and detector QAP test results. Uncovers the root cause of rejected X-ray exams, paving the way for targeted training, improved efficiency, and reductions in unnecessary patient dose.

iCenter asset management software platform

Optimize utilization of your X-ray equipment. Balance workload using the full power of healthcare data analytics.

iCenter empowers you with data and analytics for valuable insights into the utilization and workload of your X-ray assets—to help when making strategic decisions concerning workflow optimization.



Ready whenever you are

X-ray service and support

Our X-ray systems, applications, and support never rest, so you can focus on your patients.

GE X-ray machines are fully supported by expert field engineers you know and trust. Our advanced service technologies* help you maximize uptime and ensure your X-ray system is ready when you are.

InSite™ remote connectivity

Remote diagnostics and troubleshooting for fast resolutions, often without a field engineer visit.

Remote applications assistance with engineer connecting online in real time.

Proactive monitoring, helping detect issues so they can be resolved before downtime occurs.

Education

Get the education you and your team need to stay sharp.

From intensive technical and clinical product training to our extensive continuing education opportunities for technologists and radiologists, we can help you meet your training needs, online and onsite.

* Service and education offers may vary by country. Check with your local representative.





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