PHILIPS

Ultrasound



Designed to do more

EPIQ Elite premium ultrasound for Ob/Gyn

What does it take to be Elite in Ob/Gyn?

Philips ultrasound introduces EPIQ Elite for Ob/Gyn as a new class of premium ultrasound for obstetrics and gynecology that meets the needs of today's most demanding practices through:

- Powerful image processing
- Efficient workflow
- System intelligence



Designed for life

Our solutions are designed to give your patients peace of mind by giving you more information earlier in pregnancy and making it easier to reach a confident diagnosis.

Diagnostic confidence, earlier and easier
Be certain and decisive with Philips premium-quality imaging.

Made for you
With optimized workflow, you can spend more time caring for your patients.

Your partner today and tomorrow
High-impact diagnoses require a trusted partner that brings you closer to your patients.

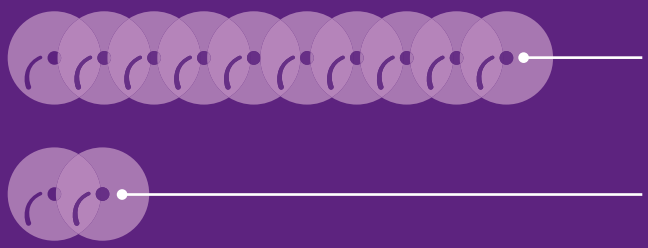
Amazing processing power

Our most powerful architecture

EPIQ Elite ultrasound features ***n***SIGHT Imaging, which far surpasses conventional ultrasound performance to reach new levels of definition and clarity.[1]

The key to extraordinary real-time images
Incorporating a custom multi-stage precision beamformer along with massive parallel processing, this proprietary architecture captures an enormous amount of acoustic data from each transmit operation and performs digital beam reconstruction along with mathematically optimized focal processing. This creates extraordinary real-time images with exceptional frame rate, uniformity and penetration.

Pushing the limits in processing power
EPIQ Elite ultrasound is uniquely designed to process acoustic data at stunning rates. ***n***SIGHT Imaging touches all aspects of acoustic acquisition and image processing, allowing you to truly experience ultrasound's evolution to a more definitive modality. The EPIQ architecture processes the equivalent of 10 DVDs/sec, while many software-based beamformer architectures struggle to process the equivalent of even 2 DVDs/sec.



EPIQ Elite processing power
Equivalent to processing 15 DVDs/sec

Processing power of other beamformer architectures
Equivalent to processing 2 DVDs/sec

Quantifying breakthroughs*

Advances in imaging performance, compared to conventional premium systems**

- **Up to 76% increase** in penetration (penetration = ability to scan at depths and maintain resolution in order to complete the study)
- **Up to 213% increase** in temporal resolution (temporal resolution = ability to maintain resolution at high frame rates) for EPIQ Elite Advanced and a **160% increase** in temporal resolution for EPIQ Elite

* 2013 quantitative engineering study comparing Philips iU22 ultrasound system with EPIQ.
**xMATRIX is available on EPIQ Elite Advanced and as an upgrade path on EPIQ Elite.

Paradigm-changing imaging architecture

EPIQ Elite with ***n***SIGHT Imaging does not just improve ultrasound performance. It redefines expectations about what is possible.

Frame rate



Conventional

Users must choose between frame rate and image quality.



nSIGHT Imaging

More than doubles the frame rate without impact to image quality. Creates focused images with fewer transmit operations so you can experience both highly detailed ultrasound images and extraordinary temporal resolution.

Uniformity



Conventional

Best resolution is limited to transmit focal zone.



nSIGHT Imaging

Corrects focus during beam reconstruction for superb uniformity. Achieves uniformity through coherent beam reconstruction algorithms that apply mathematical focal correction coefficients continually at all depths of the image.

Penetration



Conventional

Penetration limitations and poor sensitivity to weak signals.



nSIGHT Imaging

Superb penetration across full range of frequencies. Reinforces weak tissue signals with the ultra-wide dynamic range and unique beam reconstruction of the architecture, allowing enhanced penetration at higher frequencies, even on difficult patients.

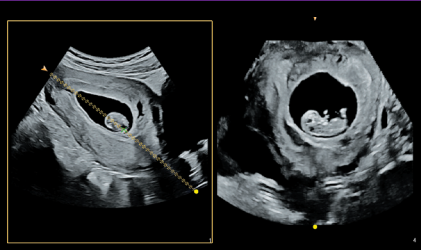
XRES Pro next-generation image processing

EPIQ Elite ultrasound features XRES Pro, our next-generation high-resolution image processing approach that elevates tissue definition and clarity to new levels in OB imaging.

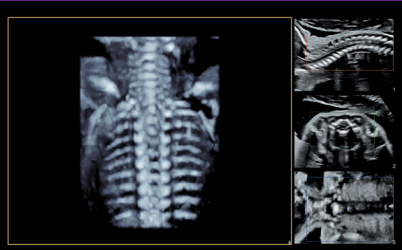
At real-time frame rates, XRES Pro uses multi-parametric precision filters that subdivide image elements, analyze this data and then apply advanced algorithms to sharpen borders and interfaces and provide superb tissue conspicuity. XRES Pro allows you full adjustability to match the level of enhancement to clinical imaging requirements for elevated diagnostic confidence with virtually all patients.



Exceptional detail with the V9-2.



First-trimester imaging with the V9-2 with FlexVue feature.



An expanded view of the fetal spine using the V9-2 and TrueVue.

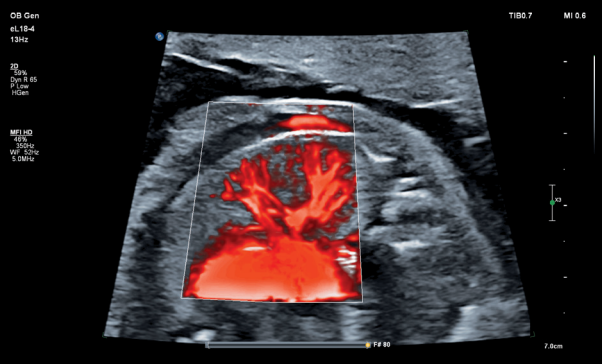
Capture
remarkable detail in perfusion

MicroFlow Imaging High Definition
MicroFlow Imaging High Definition (MFI-HD) is a proprietary enhancement to CPA mode designed to detect low-volume, low-velocity blood flow found in fetal, placental, uterine and ovarian vasculature. MFI-HD overcomes many of the technical barriers associated with conventional methods to detect small vessel blood flow with high resolution and minimal artifacts.

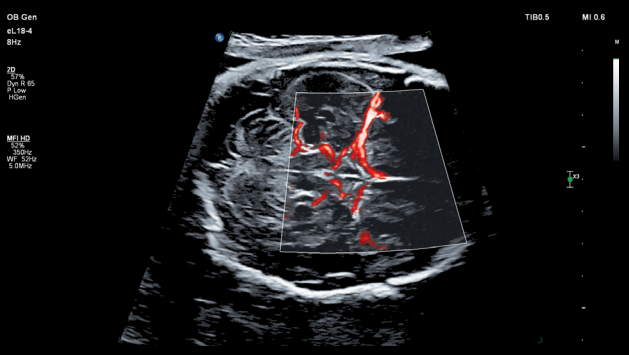
MFI maintains high frame rate and 2D image quality while applying advanced artifact reduction techniques. New 2D image subtraction, 2D blending and side-by-side display options offer excellent visualization versatility.



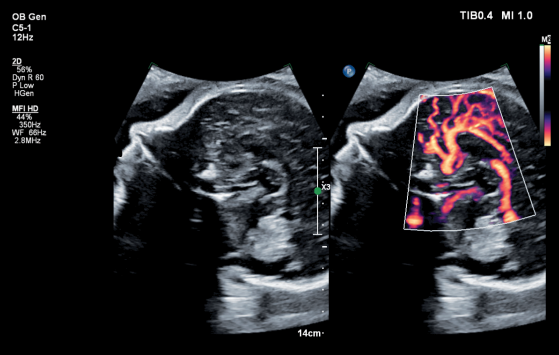
Fetal ductus venous with MFI-HD



Fetal lung perfusion with MFI-HD



Fetal circle of Willis with MFI-HD



Fetal brain pericallosal artery with MFI-HD

Expanding
your HD work environment

Experience full high-definition viewing with the new immersive Philips HD MAX display.

HD MAX uses high-contrast dynamic range and enhanced black levels for subtle delineation of grayscale values.

- 24-inch display
- 40% brighter than OLED technology
- Meets ACR display standard for diagnostic imaging brightness levels
- Exceptional fit for the Philips MaxVue imaging mode
- Supported by a new ergonomic arm

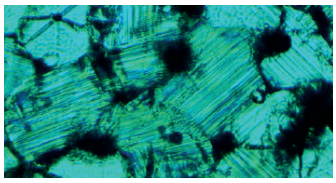


Philips HD MAX display is **40%** brighter than OLED technology

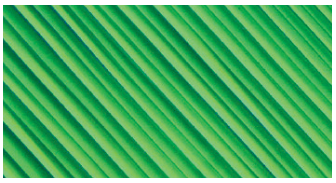


HD MAX features superb off-angle viewing for visualization of clinical images throughout the scanning room.

Experience a new generation of PureWave



Conventional PZT (x800)



PureWave crystal (x800)

Power to scan the technically difficult patient

While superb image quality is essential in Ob/Gyn ultrasound, the increasing number of patients with high BMIs makes it crucial to find ways to optimize exam success on these technically challenging patients. PureWave is your answer.

PureWave crystals have virtually perfect uniformity for greater bandwidth and twice the efficiency of conventional ceramic materials. The result is excellent imaging and Doppler performance.

V9-2 transducer

Pairing the V9-2 transducer with the EPIQ Elite premium ultrasound system offers next-level Ob/Gyn imaging.

- First PureWave mechanical volume transducer
- Lightest in its class
- Exceptional ergonomic design
- First, second and third trimester applications

Supports additional technology

- **2D, 3D and 4D**
- **STIC**
- **XRES Pro**
- **TrueVue/GlassVue**
- **TouchVue/MPR Touch**
- **MicroFlow Imaging**
- **aReveal**[A.I.]
- **aBiometry Assist**[A.I.]
- **FlexVue**



Discover

ultra diagnostic confidence

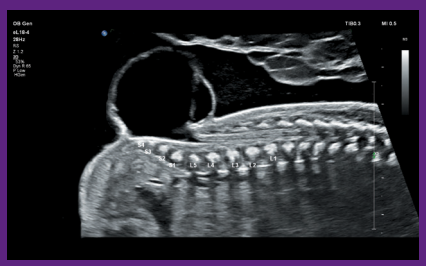
Ultra broadband has never been seen in Ob/Gyn ultrasound before, not even at the premium level. The Philips eL18-4 ultra broadband transducer provides superb 2D detail resolution, along with the penetration needed to help physicians increase diagnostic confidence, especially in those critical first and second trimester OB exams.

The combination of superb detail resolution and penetration is made possible by advanced PureWave crystal technology with fine-elevation focusing capability.

- Multi-row array configuration for full electronic focusing of the elevation plane
- Elevation focusing works in conjunction with azimuthal focusing to provide thin-slice imaging



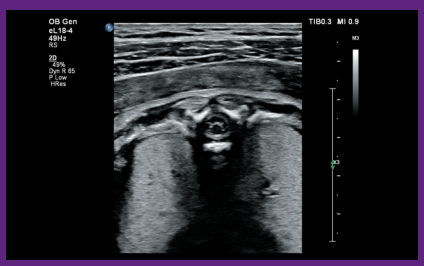
The eL18-4 fine-elevation focused linear transducer generates ultra-broadband frequencies from 2 to 22 MHz.



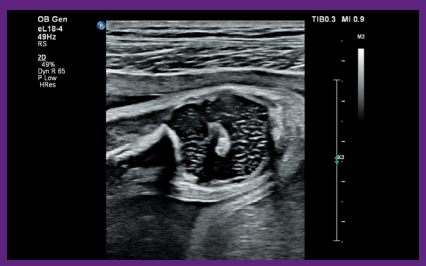
Myelomeningocele demonstrated using the eL18-4.



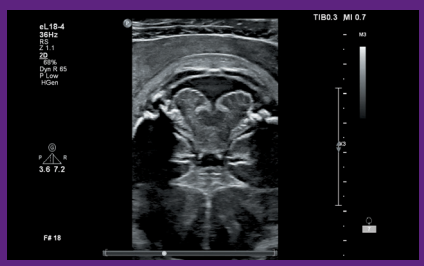
Fetal profile shown using the eL18-4.



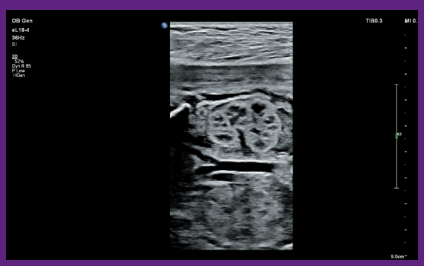
Imaging with the eL18-4 reveals the fetal spinal cord.



The eL18-4 shows the fetal patella.



Fetal brain as shown by the eL18-4.

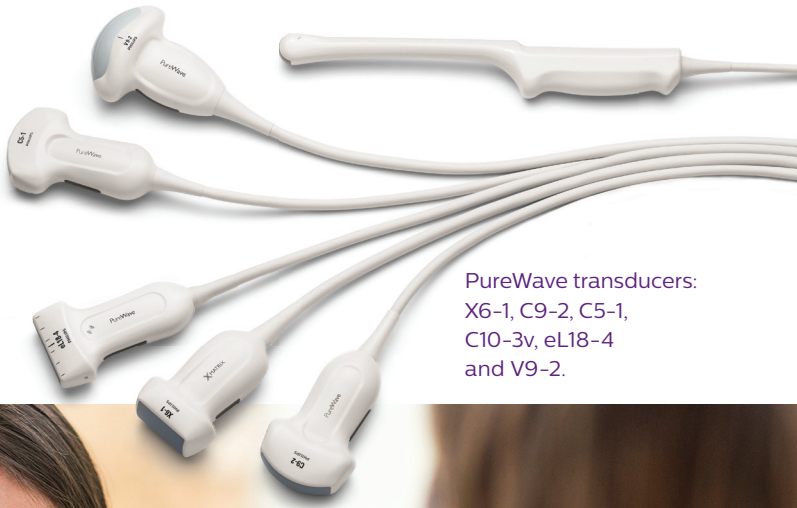


Fetal kidney detail using the eL18-4.

The power of PureWave

When you're seeing more patients with high BMIs, finding ways to optimize exam success on these technically challenging patients becomes even more crucial. PureWave is your answer.

Image even technically difficult patients
With a complete family of PureWave transducers, your most difficult diagnoses are now easier. PureWave crystal technology represents the biggest breakthrough in piezoelectric transducer material in 40 years. The pure, uniform crystals of PureWave are 85% more efficient than conventional piezoelectric material, resulting in exceptional performance. This technology allows for enhanced penetration in difficult patients and for excellent detailed resolution.



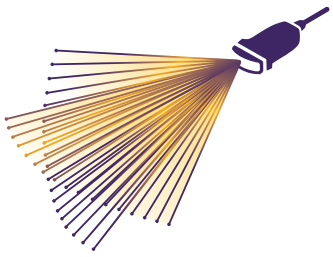
PureWave transducers: X6-1, C9-2, C5-1, C10-3v, eL18-4 and V9-2.



Overcome imaging challenges

xMATRIX* is our most leading edge, versatile ultrasound transducer technology available.

With the touch of a button, xMATRIX offers all available modes in a single transducer: 2D, 3D/4D, Live xPlane, Live MPR, MPR, pulsed wave Doppler, color Doppler and CPA.



Live xPlane imaging



Volume imaging

* xMATRIX is available on EPIQ Elite Advanced and as an upgrade path on EPIQ Elite.

Visualize

the challenging with ease

You need the ability to quickly visualize a wide variety of planes of section within 3D volumes. FlexVue with its orthogonal view are highly versatile tools that allow for easy visualization of technically difficult anatomical views from 3D volumes that are essential for diagnosis of Ob/Gyn pathology.

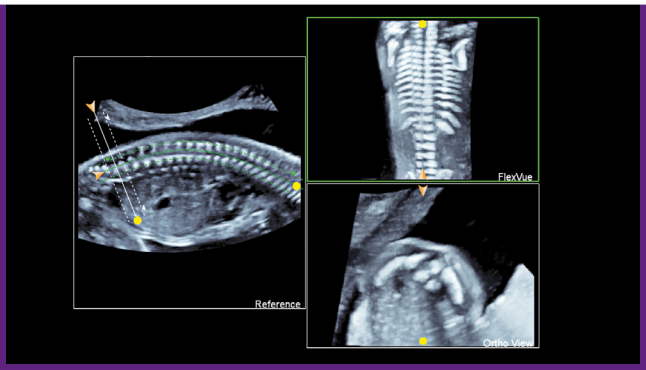
Easily evaluate anatomy

FlexVue and orthogonal view displays structures in their entirety in projected views. Even when a structure is curved, you can easily evaluate the anatomy in a wide variety of planes of section. The coronal and transverse planes are imperative for diagnosing uterine malformations and IUD placement. FlexVue with its orthogonal view is particularity useful in assessing the uterine anomalies where the cervix and uterine body are not always in the same plane due to their curvature. FlexVue with the orthogonal view are also useful in assessing the fetal spine where all portions of the spine are not always in the same plane due to their curvature.

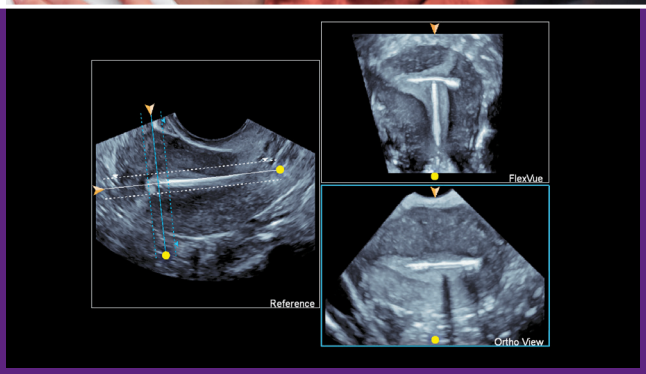
Tissue Emphasis Control

You now have the ability to change the image appearance of the projected view produced by FlexVue. FlexVue offers Tissue Emphasis Control, which allows you to change the range of intensity projections from Maximum Intensity Projection to Minimum Intensity Projection in just four stages.





FlexVue featured demonstrating a curved fetal spine in a complete projected planar view and orthogonal view in a corresponding transverse view.



FlexVue produces a complete projected coronal view of the uterus with an IUD perforating the myometrium and the corresponding transverse view is displayed by orthogonal view.



Optimize
3D/4D workflow

An intuitive touch

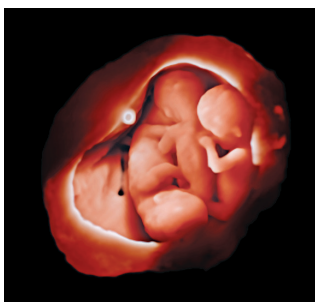
TouchVue and MPR Touch are easier, more intuitive methods of 3D workflow. Simple finger gestures on the system's touch panel allow you to control 3D volume rotation in all axes, pinch zoom and touch sculpt, and size and position MPR parameters. When in TrueVue Pro 3D photorealistic rendering mode, TouchVue allows the internal light source to be positioned in all axes.

EPIQ Elite offers easier, more intuitive workflow with the right touch to enhance detailed Ob/Gyn exams.

Bring clinicians and Ob/Gyn patients closer together with "Lifelike" TrueVue Pro 3D imaging display with the intuitive TouchVue 3D volume workflow. The combination of TrueVue Pro with its advanced image processor and TouchVue may foster maternal-fetal bonding and helps facilitate doctor-to-patient communication.

Real life, illuminated

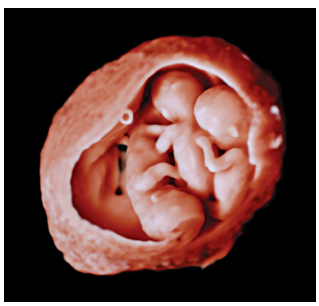
Philips TrueVue Pro virtual light source can be placed anywhere within the acquired 3D volume, allowing manipulation of light and shadow on anatomical structures to enhance clinical confidence and promote maternal-fetal bonding.



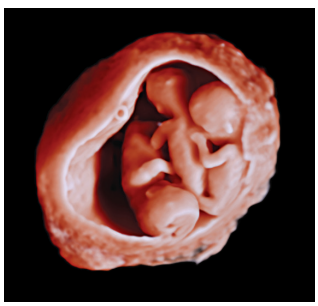
Light source, umbilical cord.



Light source, upper right.



Light source, lower left.



Light source, lower right.

More reproducible results

Anatomical Intelligence for Ultrasound

At the heart of the powerful EPIQ Elite architecture is our Philips exclusive Anatomical Intelligence for Ultrasound (AIUS), designed to elevate the ultrasound system with advanced organ modeling, image slicing and proven quantification. Exams are easier to perform, more reproducible and deliver new levels of clinical information.



Before aReveal[A.I.]



After aReveal[A.I.] applied



aBiometry Assist[A.I.]

One touch to reveal

aReveal[A.I.] uses a proprietary anatomical intelligence algorithm that automatically sculpts away data around the fetal face by recognizing the geometry of the skull.

A welcome assist during the obstetrical exam

aBiometry Assist[A.I.] uses anatomical intelligence to automatically preplace measurement cursors on selected structures to assess fetal age and growth trends.

A solution made for OB

The earlier, the better

The Philips OB solution for earlier diagnosis focuses on three main areas to enhance the experience of both physician and mother-to-be: image quality, lifelike imaging and efficient workflow.



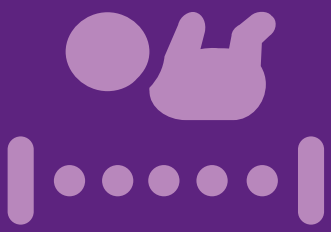
Image quality

Philips eL18-4 transducer with MicroFlow Imaging and V9-2 transducer offer outstanding imaging quality for evaluating fetal anatomy. Leading-edge image quality and ergonomics speed confident fetal health assessments.

Lifelike imaging

TrueVue, with its internal light source, provides innovative 3D/4D imaging that outperforms traditional rendering algorithms, allowing for highly detailed images of the fetus.





Efficient workflow

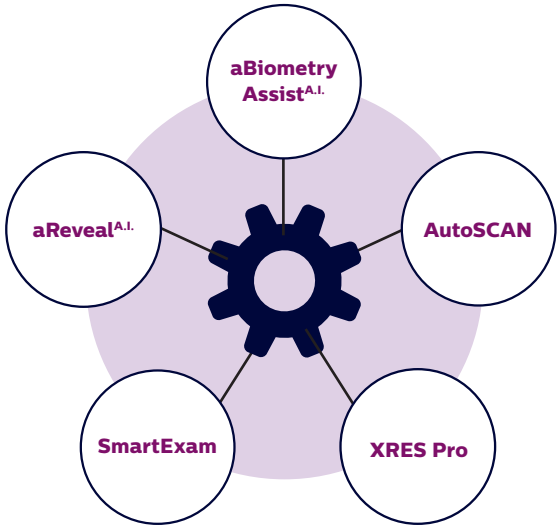
TouchVue and MPR Touch are easier, more intuitive methods of 3D workflow using simple finger gestures to control 3D volumes and MPR parameters. aBiometry Assist[A.I.] combined with SmartExam uses anatomical intelligence to semi-automate fetal measurements and FlexVue is a highly versatile tool that allows visualization of technically difficult anatomical views from 3D volumes that are essential for diagnosis.

EPIQ Elite brings efficiency to premium ultrasound

The EPIQ Elite tablet-like interface results in 40% to 80% less reach and 15% fewer steps.[1]

SmartExam protocols

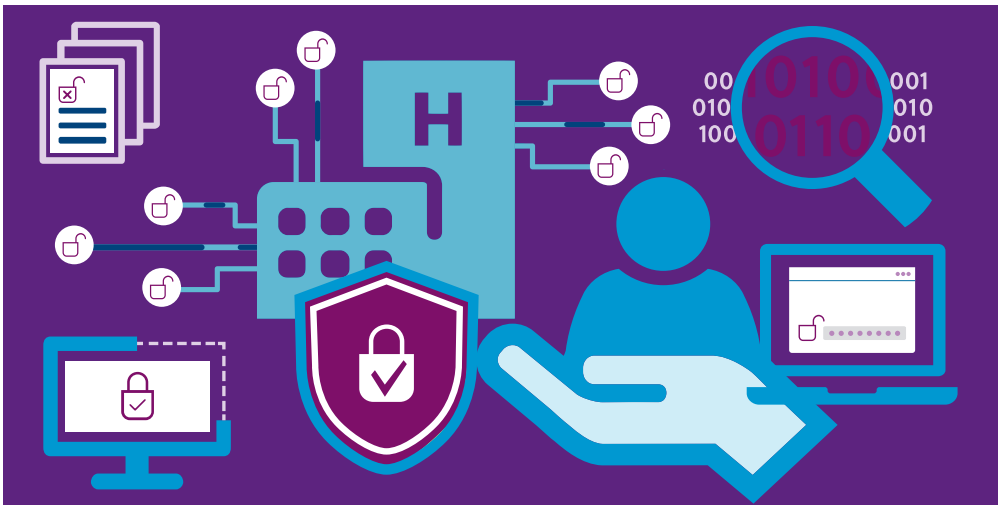
System-guided SmartExam protocols facilitate exams with an onscreen menu guiding you through required views and modes while automatically entering annotations and prompting for measurements. SmartExam protocols help you build a report quickly, alert you to missed views and reduce overall keystrokes and exam time.



Protect your patients

Powerful system security protects sensitive patient data



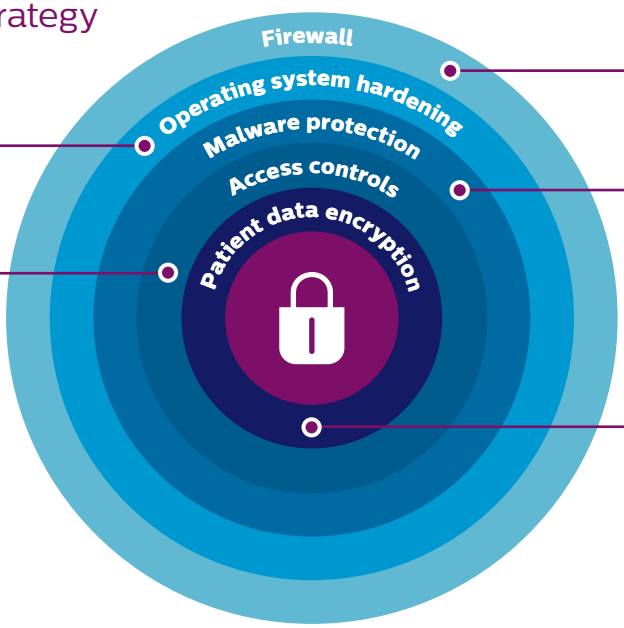


Hospitals and healthcare organizations are spending more to protect their systems and patient data from cyberattacks. Of healthcare providers, one-third of large data security incidents occur in hospitals.[2] That is why healthcare cybersecurity spending will exceed $65 billion over the next five years.[3]

Ultrasound devices are highly mobile and can exist in a wired or wireless environment. As a result, Philips has made security a high priority for ultrasound systems. The EPIQ Elite platform with Windows 10 is built around a powerful defense-in-depth principle and delivers an outstanding set of data security features comprising of five core layers.

Defense-in-depth strategy uses a multi-layered defense that is more difficult to penetrate than a single barrier. This is a basis for best practices in medical device security. Philips recognizes the importance of securing your medical devices and protecting your patient data. Together we can maintain a secure environment by remaining vigilant and identifying the ever-changing cybersecurity threat landscape.

Defense-in-depth strategy



Disables unnecessary services
Reduces the attack surface

Prevent unauthorized users
Three levels
Customizable

Blocks unnecessary ports
Limits the attack profile

Whitelisting
Allows only known and trusted applications and libraries
Requires fewer updates

At rest and in transit
Based on your requirements

Count on us
as your patients count on you

The value of a Philips ultrasound system extends far beyond technology. With every EPIQ Elite system, you get access to our award-winning service organization,* competitive financing, and educational tools that help you get the most out of your system.**

Always there, always on

We work as one with your team to keep your EPIQ Elite system running smoothly.

Remote service capabilities maximize efficiency
Easy, rapid technical and clinical support through remote desktop enables a virtual visit with a Philips expert.

Proactive monitoring solutions maximize uptime
Philips proactive monitoring increases system availability by predicting potential system disruptions and proactively acting on them, letting you focus on what is most important – your patients.

Immediate support request at your fingertips
The support request button allows you to enter a request directly from the control panel, for a fast and convenient communication mechanism with Philips experts without leaving your patient, minimizing workflow interruption.

On-cart transducer test provides confidence in your transducer quality
On-cart transducer test provides a non-phantom method to test EPIQ Elite system transducers at any time, giving you confidence in your diagnostic information.

Sharing risk, increasing the return on your investment

Partner with us to maximize utilization and uptime of your EPIQ Elite system.

Utilization reports for confident decision-making
Data intelligence tools can help you make informed decisions to improve workflow, deliver quality patient care, and decrease the total cost of ownership. The on-board utilization tool provides individual transducer usage data and the ability to sort by exam type.

Understanding your needs, designed for you

Our flexible RightFit service agreements, education offerings, and innovative financing solutions can be adapted to meet your needs and strategic priorities.

- **Xtend Coverage:** lets you choose additional service coverage for your ultrasound equipment at the time of purchase to more easily calculate your total cost of ownership.
- **Clinical education solutions:** comprehensive, clinically relevant courses, programs, and learning paths designed to help you improve operational efficiency and enhance patient care.

ISSL technology

- This industry-standard protocol meets global privacy standards and provides a safe and secure connection to the Philips remote services network using your existing Internet access point.



* Philips is rated number one in overall service performance for ultrasound for 26 consecutive years in the annual IMV ServiceTrak survey in the USA.
** Optional. Not all services available in all geographies; contact your Philips representative for more information. May require service contract.



References

1 Quantitative engineering study comparing Philips iU22 ultrasound system with EPIQ 7.

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Printed in The Netherlands.
4522 991 53711 * MAR 2020