

# RAD

The Radiology Guide to Technology & Informatics in Europe

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# BOOK

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# Innovation you can touch

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Leading Innovation >>>

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**A**t Toshiba Medical Systems we make every effort to provide you with the best quality products and services to meet the challenging demands of your daily clinical practice. Continuous #1 ratings in customer satisfaction surveys such as KLAS [1] or MD Buyline [2] are both incentive and commitment to us. Our product development is driven by our customers' requirements and focuses on values that are most important to you: uncompromised image quality, state of the art ergonomics, workflow support, economic efficiency, longevity and sustainability.

With that philosophy in mind and with the decades-long experience of Toshiba in the development of both laptop PCs and diagnostic imaging equipment we have now created the first ultraportable diagnostic ultrasound device with premium image quality and built-in touch screen to provide uncompromised diagnostic performance and joy of use – Viamo.

### Diagnostic quality without compromise

Viamo shares its core imaging technology with Aplio XG, Toshiba's premium cart-based ultrasound system, which means that industry-leading features like Pulse Subtraction, ApliPure or Advanced Dynamic Flow can be migrated from Aplio XG to Viamo to provide the high-



Viamo's built-in touch screen enables seamless workflow and intuitive operation of the system.

est image quality also in situations where unlimited portability is required.

Viamo shares its transducer technology with our premium cart-based systems as well. A whole range of Aplio XG transducers is connectable to Viamo. The standard transducers are equipped with small-size connectors to attach them directly to Viamo's main unit. The system is also capable of sharing specialty transducers with a cart-based system by means of a full-size connector, which is available for Viamo's pole cart. This option can help you leverage your full diagnostic potential while minimizing your investment into expensive specialty transducers.

# Innovation you can touch

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Viamo's brilliant 15 inch monitor displays the ultrasonic images with high resolution, allowing the user to appreciate even small objects or subtle differences in echogenicity with ease. This makes interventional work more secure. But it also means that diagnoses made with Viamo are of the same quality as those made with full-sized equipment and no re-scans will be required for a definite diagnosis.

### Intuitive operation with built-in touch screen

Operability and workflow limitations are common problems in portable devices. Full size panels are simply shrunk to laptop dimensions resulting in tiny keys. Advanced functions are moved into awkward popup menus or to additional screens attached to the cart. Not so with Viamo. The system is equipped with a built-in touch screen with dedicated user interface to allow a totally seamless and outstandingly comfortable and intuitive operation of the system.

Although Viamo can be fully operated via its touch screen, it is complemented by a concise console holding 15 hard keys. The hybrid operation using the reduced console and touch screen enables the user to control the system as easily and comfortably as a full-sized cart. Individual key functions on Viamo's console as well as on the touch screen are user programmable to suit specific diagnostic

Viamo's monitor can be rotated to allow free positioning and both laptop and tablet style operation of the machine.





Viamo's height adjustable pole cart is extremely slim and easy to manoeuvre.

requirements or personal preferences. A soft keyboard allows the user to enter patient data or comments whenever required.

Viamo's monitor can be rotated to allow free positioning of the screen and both laptop and tablet style operation of the system. Viamo's height adjustable pole cart is extremely slim and enables the user to freely manoeuvre and position the device. Viamo's touch screen can also be operated while wearing gloves or through a transparent sterile cover whenever required.

The battery-powered system is operational within just five seconds when opened, which makes the system instantaneously available also in critical situations. The power supply is elegantly integrated into Viamo's pole cart allowing the system to be moved easily. The cart offers storage space for cables, napkins and other utensils.

### Seamless workflow tailored to your needs

A whole range of workflow automation functions is available on Viamo. One-touch QuickScan helps you to achieve greater workflow consistency in less time. With a simple push of a button, you can automatically optimize image quality with acoustic precision while suppressing white noise in echo-weak regions. And Viamo's SonoSet function lets you carry

out routine exams by executing freely programmable protocols simply at the touch of a button. SonoSet also combines multiple operations into a single keystroke. This unique tool can make standard scans easier and a lot faster.

Viamo features the same comfort as full-sized systems not only in terms of imaging and operation, but it is also equipped with a fully featured Patient and Image Management System. Clinical images and clips acquired with the system can be stored on Viamo's integrated hard disk, sent to a PACS through its integrated DICOM interface, or exported in PC compatible formats to USB memory stick.

When opened, Viamo is operational within just 5 seconds, which makes it instantaneously available in any situation.



Viamo's pole cart can be equipped with a black and white printer for documentation on paper. The system is also capable of printing clinical images directly into simplified PDF reports, which are then stored on USB memory stick and can be printed or forwarded electronically from any PC.

To protect your property against theft or damage, a Kensington Cable Lock slot is located at the rear of the main unit, and a custom-made Rimowa suitcase is available for you to carry the system securely.

### Conclusion

Viamo combines all the advantages of a portable system with the diagnostic quality and the ease of use known and appreciated from premium cart-based systems. As a full-fledged ultrasound system, Viamo is ideally suited not only for all mobile clinical and out-patient applications, but also for physician's offices where space might be an issue – but diagnostic quality is not.

### References

- 1 <http://www.klasresearch.com/>
- 2 <http://www.mdbuyline.com/>

### Remarks

*Some of the features described here are works in progress and currently not commercially available on Viamo.*

▶ Toshiba Aplio XG

<b>Modes</b>	2D, 3D, 4D, M modes; PW/CW Doppler; high PRF; color flow Doppler
<b>Scan format</b>	Linear, convex, matrix, and phased arrays; biopsy & 4D volume probes (linear and convex); Motorised-TEE; rectal, vaginal & pencil probe
<b>Transducer inputs</b>	3 + 1 (pencil)

▶ **Highlights**

- Precision Imaging, MicroPure and Elastography
- ApliPure Plus: Advanced realtime compound imaging
- Differential THI: better resolution and depth of penetration
- Advanced Dynamic Flow: Broadband colour flow Doppler
- Contrast imaging: Low MI, VRI, microflow imaging
- Whole body 4D imaging with linear and convex transducers; Volume view; Multiview



▶ Toshiba Viamo

<b>Modes</b>	2D, M modes; spectral Doppler; high PRF; color flow Doppler
<b>Scan format</b>	Linear, convex and phased arrays
<b>Transducer inputs</b>	1 + 1

▶ **Highlights**

- Premium image quality
- 5 seconds bootup time
- Hybrid operation with touch screen and programmable panel
- Versatile mounting in desktop, cart and tablet modes
- Instant image optimisation
- One-click workflow control



▶ Toshiba Xario XG

<b>Modes</b>	2D, 3D, 4D, M modes; PW/CW Doppler; HPRF; color flow Doppler
<b>Scan format</b>	Linear, convex and phased arrays; biopsy probe; 4D volume probes (linear and convex); Motorised-TEE; rectal and vaginal probe; pencil probe
<b>Transducer inputs</b>	3 + 1 (pencil)

▶ **Highlights**

- Precision Imaging and MicroPure
- ApliPure Plus: advanced real-time compound imaging
- Differential THI: better resolution and depth of penetration
- Advanced Dynamic Flow: broadband color flow doppler
- Quick Scan: image optimisation with just one click
- Whole body 4D imaging with linear and convex transducers; Volume view; Multiview



▶ Toshiba Xario

<b>Modes</b>	2D, 3D, 4D, M modes; PW/CW Doppler; high PRF; color flow Doppler
<b>Scan format</b>	Linear, convex, and phased arrays; biopsy probe; 4D volume probe; Motorised-TEE; rectal and vaginal probe; pencil probe
<b>Transducer inputs</b>	3 + 1 (pencil)

▶ **Highlights**

- Precision Imaging and 4D Convex
- ApliPure: Realtime compound imaging
- Advanced Dynamic Flow: Broadband colour flow Doppler
- Quick Scan: image optimization with just one click
- User defined programming of operating console
- IASSIST: Remote control via handheld Bluetooth controller



▶ Toshiba Nemio XG

<b>Modes</b>	2D, 3D, 4D, M modes; PW/CW Doppler; HPRF; color flow Doppler
<b>Scan format</b>	Linear, convex and phased arrays; biopsy probe; 4D volume probe; TEE; rectal and vaginal probe; pencil probe, endoscopic FNA, Laparoscopic
<b>Transducer inputs</b>	3 + 1 (pencil)

▶ **Highlights**

- ApliPure: Realtime Compound Imaging
- Advanced dynamic flow: broadband color flow Doppler
- SonoSet: Workflow control with just one click
- User defined programming of menus and buttons
- Onboard reporting, DICOM, DVD, USB, and export to PC



▶ Toshiba Famio XG

<b>Modes</b>	2D, M modes; THI
<b>Scan format</b>	Linear and convex arrays; biopsy probe; rectal and vaginal probe
<b>Transducer inputs</b>	2

▶ **Highlights**

- 100% digital signal processing
- Broadband technology
- Image optimization option
- User defined programming of the operating console
- Image and loop storage on hard-disk and CD, DICOM

