

# Personal notebook ultrasound scanners

## LogicScan



## Echo Blaster

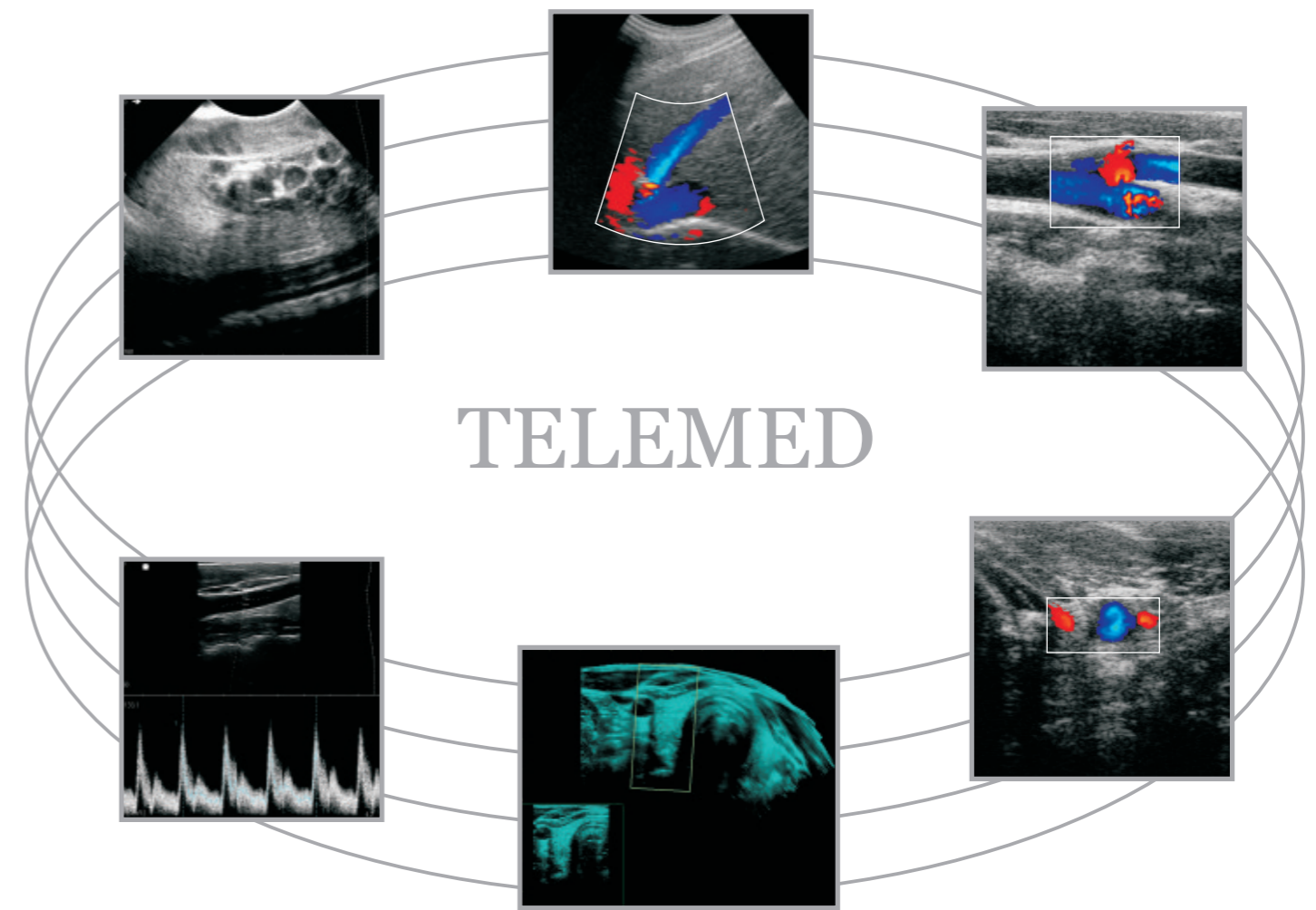
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# Improving along with you



## Portable multispeciality ultrasound scanners

The experts in computer-based ultrasound imaging, TELEMED is proud to present the new generation of imaging platforms, connectable to any modern PC. Quickly growing performance of modern notebooks in combination with a very affordable price, allow these platforms to use capabilities of personal computers for processing of ultrasound signals in real-time, providing additional features which are currently available only for top-class equipment. Not only a number of signal and image processing modules, but also control functions have been moved from hardware to software.

Adopting a variety of state-of-art techniques such as advanced focusing, wide bandwidth probe technology, multi-beam processing, novel filtering algorithms, PC-based ultrasound systems are equipped with the following imaging modes: B, M (B+B, B+M), Real Time Zoom, Spectral and Color Doppler modes\*. Very high capacity cineloop module provides capability to record as long clips as allowed by PC memory and then save clip to the hard drive or CD-ROM. An optimum frequency of broadband probes can be selected from up to six frequencies\* to ensure the best image for each examination situation.

Flexibility of these "true PC-based" scanners means that advanced technologies such as 3D imaging, wide field-of-view imaging, and real-time speckle reduction can be easily integrated, while enabling innovative and evolving solutions to be effortlessly added as customer's future needs change.

\* check specifications for availability

Located in Vilnius, Lithuania, TELEMED designs, develops and manufactures PC-based ultrasound scanners and related equipment. Using modern hardware and software technologies, TELEMED offers cost-effective and powerful solutions to clinics, private doctors and original equipment manufacturers.

TELEMED was established in 1992 for research and design in the field of ultrasound medical equipment. Since 1995, when first PC-based scanner was shipped to the customer, easy-to-use and scalable TELEMED's solutions have become an important research tool not only for physicians, but also for scientific institutions.

## Echo Blaster 64



Echo Blaster 64 is a Compact and lightweight B/W ultrasound device, offering full portability at a favorable cost.

Echo Blaster 64 is intended for use in private clinics, public and non-public health centres. It's small size and light weight provides a true mobility, a real possibility to be everywhere you want with your ultrasound system.

Echo Blaster 64 can be supplied in various modifications:

- Echo Blaster 64 EXT-1T Kit: beamformer module with single probe connector, connectable to any desktop or notebook PC. External power supply included.
- Echo Blaster 64 INT-1T Kit, Echo Blaster 64 INT-2T kit: beamformer modules with one or two probe connectors intended for installation into desktop PC.

## Echo Blaster 128



Echo Blaster 128 are flexible, advanced, modular B/W units with attractive price-to-performance ratio.

PC connectivity via USB port and light weight provides a true mobility, a real possibility to be anywhere you want with your ultrasound system. Ideal budget solution for hospitals, specialised diagnostical centers, public and non-public health centers as well as private surgeries.

Echo Blaster 128 can be supplied in various modifications:

- Echo Blaster 128 EXT-1Z Kit: beamformer module with single probe connector. Connectable to desktop or notebook computer. External power supply included.
- Echo Blaster 128 INT-1Z Kit, Echo Blaster 128 INT-2Z Kits: beamformer modules with one or two probe connectors. Intended for installation inside desktop PC.

## LogicScan 64



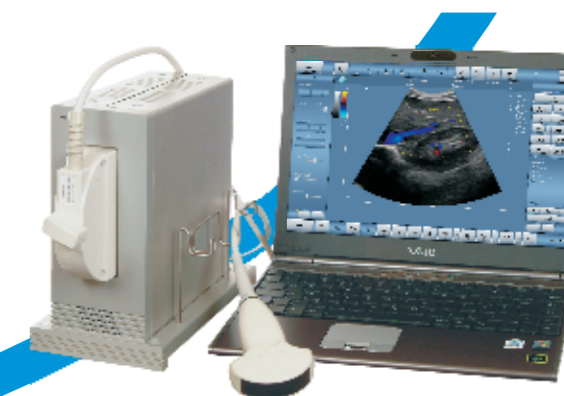
LogicScan 64 ultrasound system has been designed as extremely light-weight, battery-powered, portable Color Doppler device.

With its 1.5 kg weight LogicScan 64 is easy to transport, boosting its application to more places like ambulances and sport medicine. Its unique fanless design provides possibility to use LogicScan 64 also in operation rooms.

B/W, Color and Power Doppler cine clips can be stored in AVI format for further review, extensive and customizable measurement package makes examination process more simple and quick.

LogicScan 64 is available in compact flat box, which may be used as a notebook stand.

## LogicScan 128

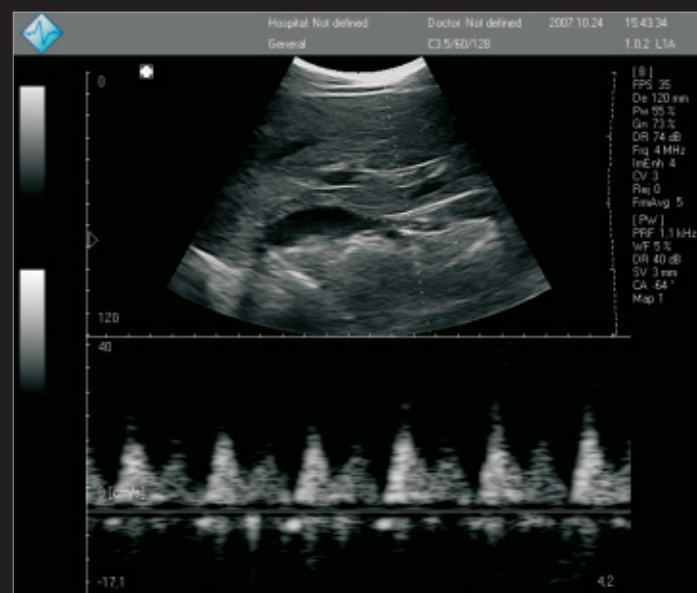
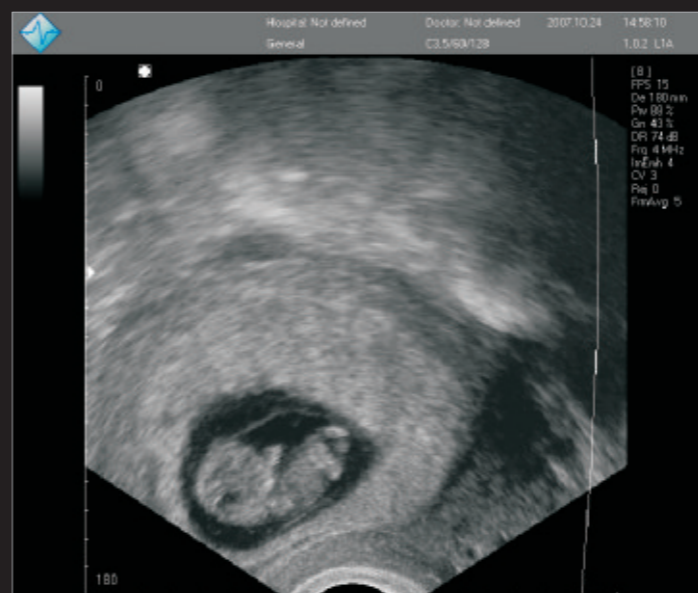
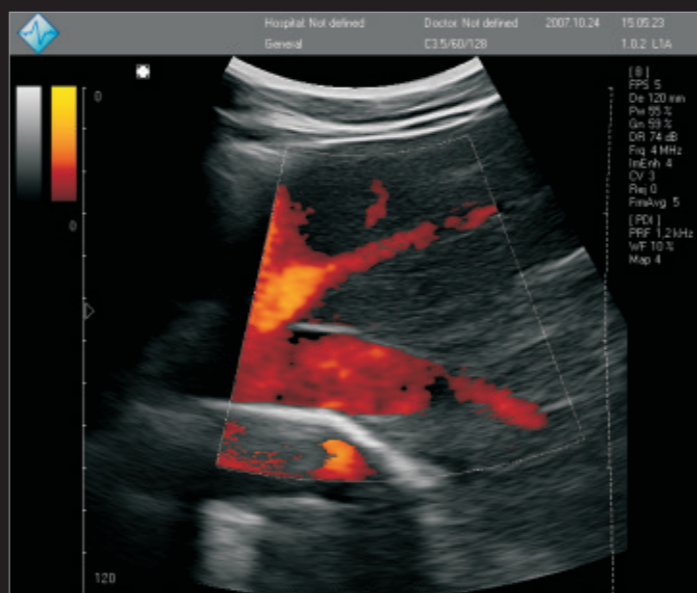
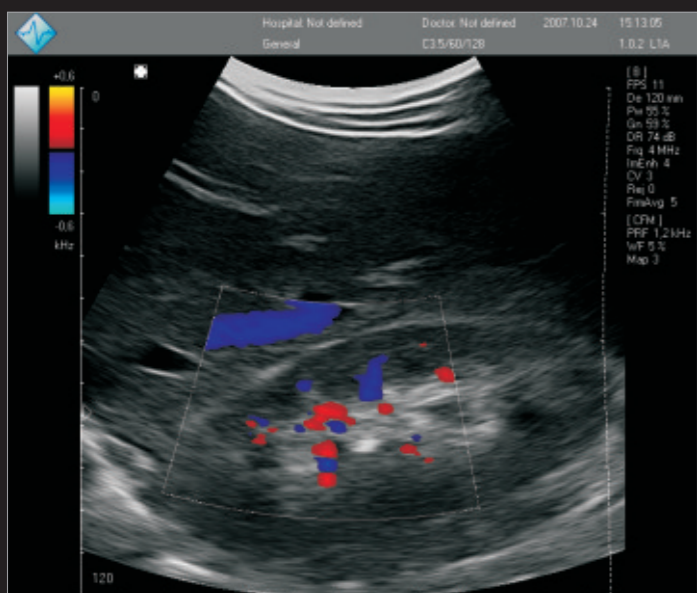
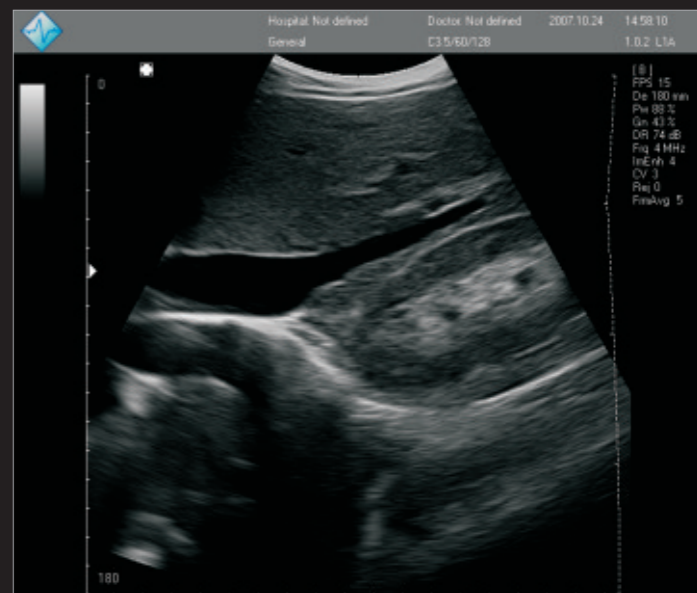
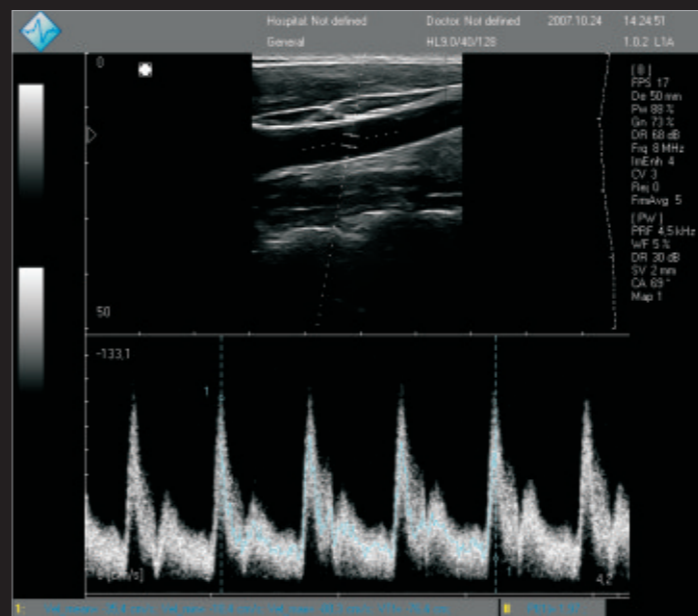
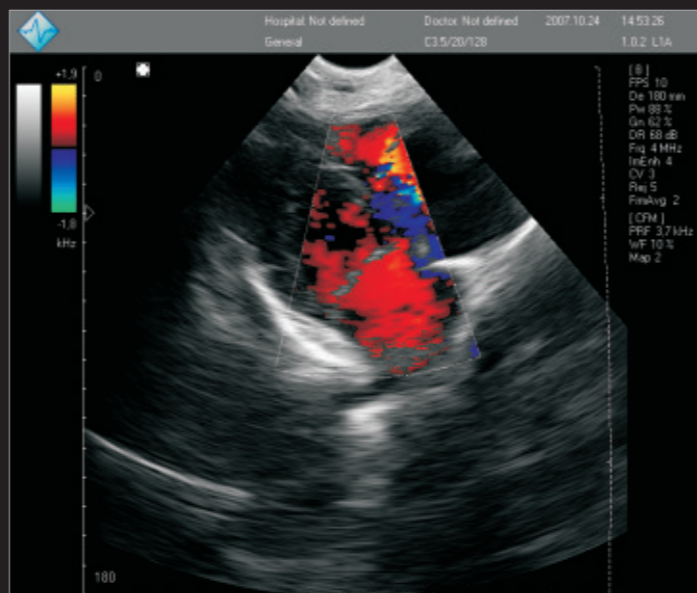
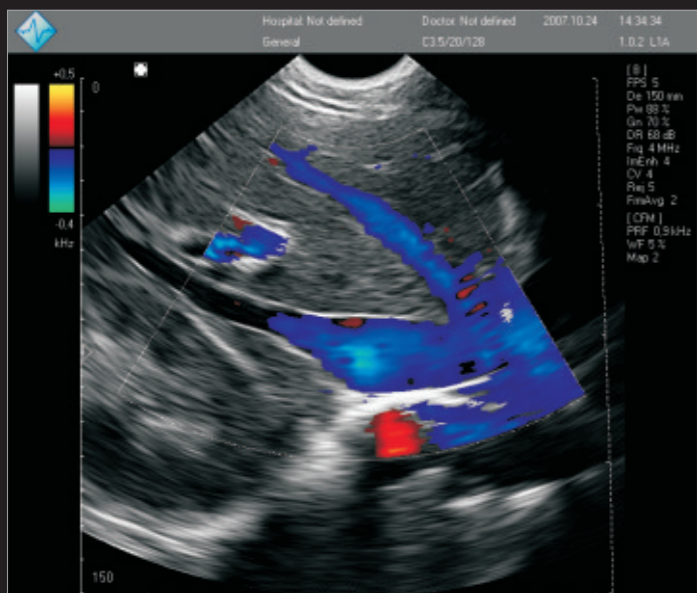
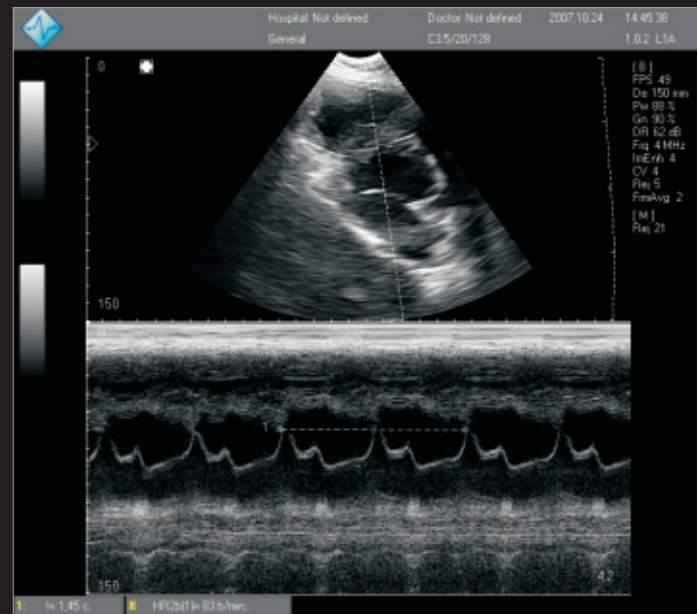
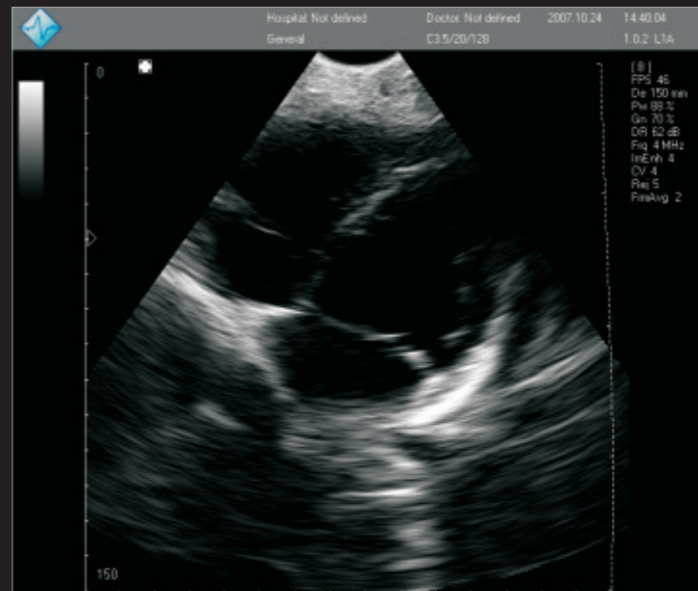
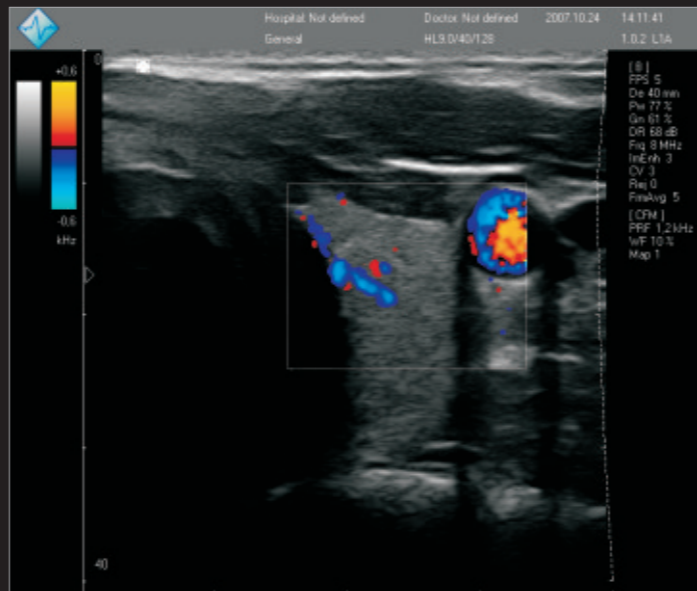
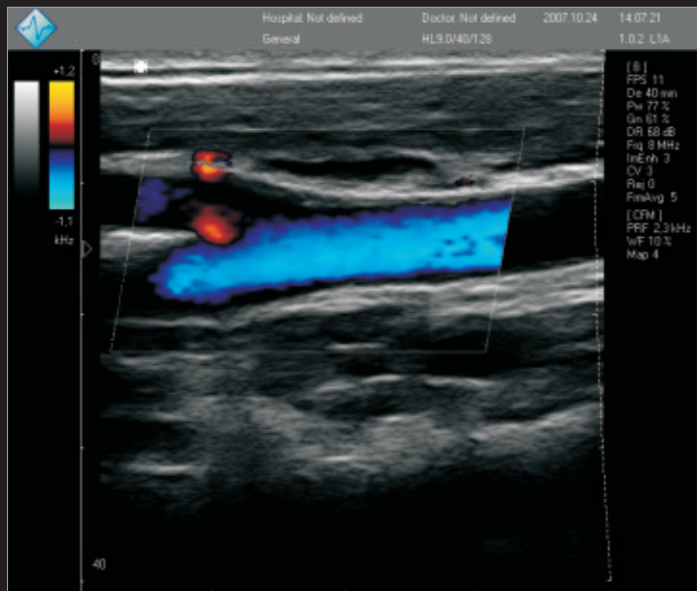


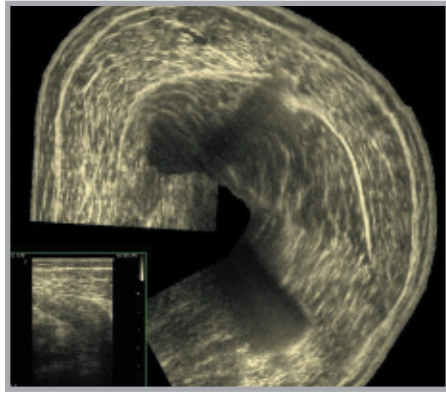
LogicScan 128 ultrasound system is a Color Doppler device. Its key features include digital Doppler multi-beam processing, which increases frame rate during Color and Power Doppler imaging, and a novel hybrid signal processing module, for improved sensitivity. Pulsed Wave (PW) Spectral Doppler available as a software upgrade.

This system is equipped with a wide variety of probes to cover a broad range of application areas. Software features include new Echo Wave II software as a standard package and the following optional software: 3DView - for software-based 3D image rendering, PanoView - for freehand panoramic scanning with recently added distance estimation feature, ClearView - for real-time speckle noise reduction.

The ultrasound scanner has been developed as compact, lightweight color system for application in obstetrics and gynecology, general and musculoskeletal imaging, vascular access and others.

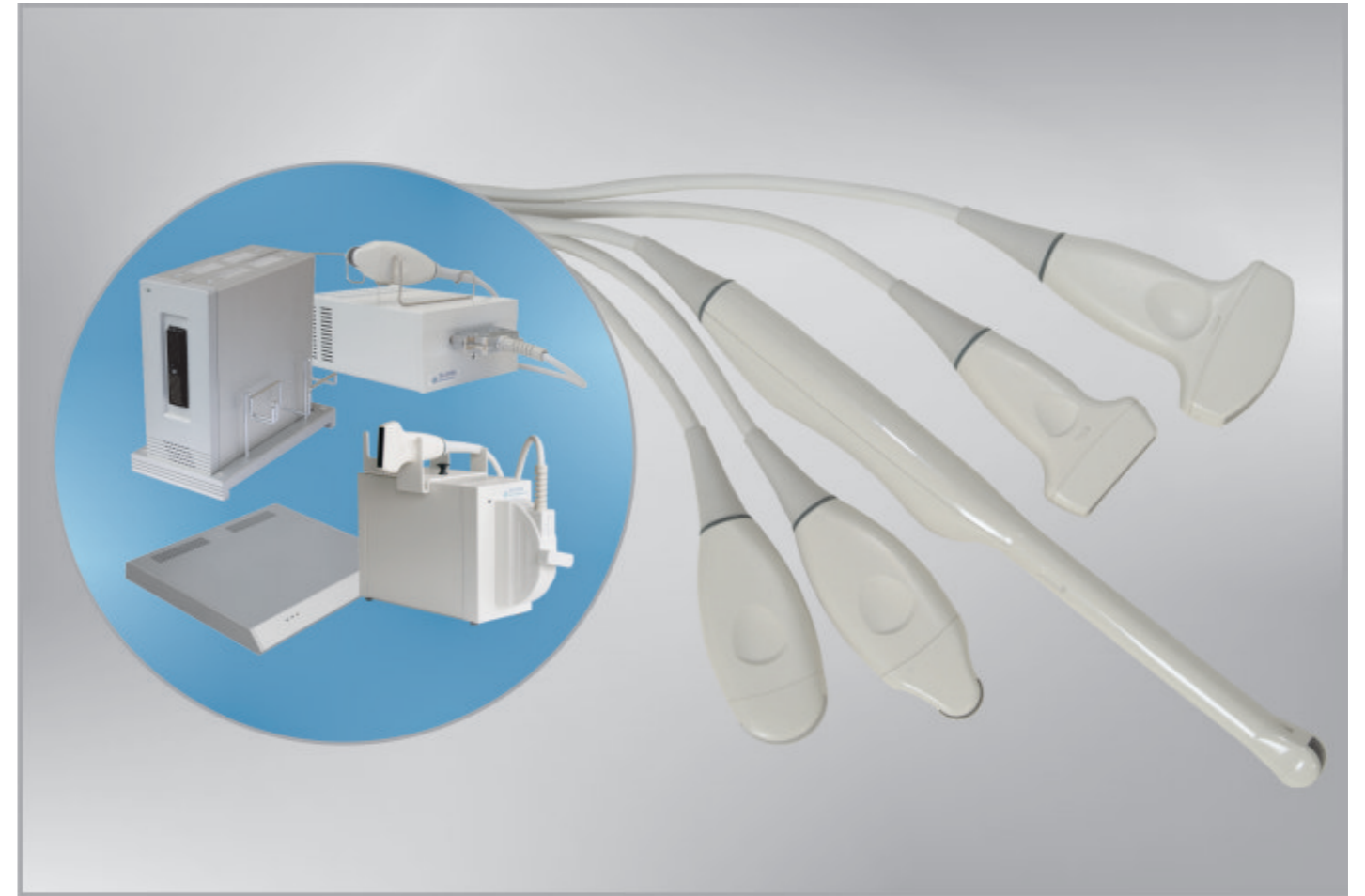
For OEM customers LogicScan beamformer is also available in a package with SDK .



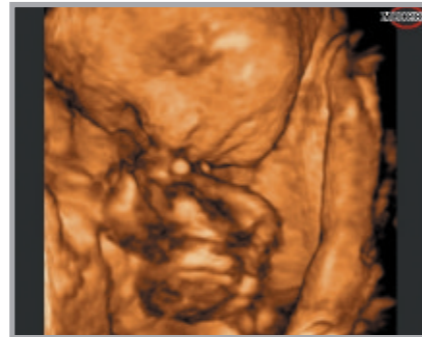


**PanoView** concatenates several ultrasound frames to a large panorama view and produces images with a large anatomic field-of-view. Intuitivity, speed and ease of usage makes it the method of choice for the documentation and monitoring of large superficial lesions, for example hematomas following arterial puncture.

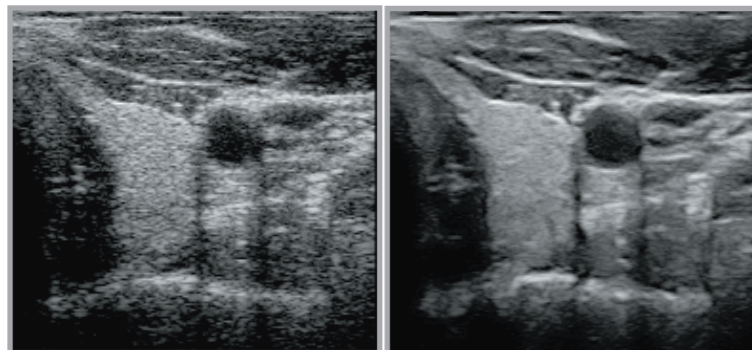
## Probes for Echo Blaster and LogicScan family scanners



**3DView** allows viewing coronal, sagittal and lateral scans as well as three-dimensional realistic imaging of anatomic structures. The diagnosis is more immediate and safe because the complete acquisition and visualization of the region under examination provides additional information to study: it is possible to review the data, performing a "virtual sonography" after the patient is gone.



**ClearView** is a real-time software add-on for reduction of the speckle artifact. High speed algorithm analyses ultrasound image features - low level features like edges, lines and higher level image representations such as texture, regions, object boundaries, and then averages or emphasizes the image based on the results of this comparison. The connection between structures in a living body is improved and at the same time speckle noise is eliminated.



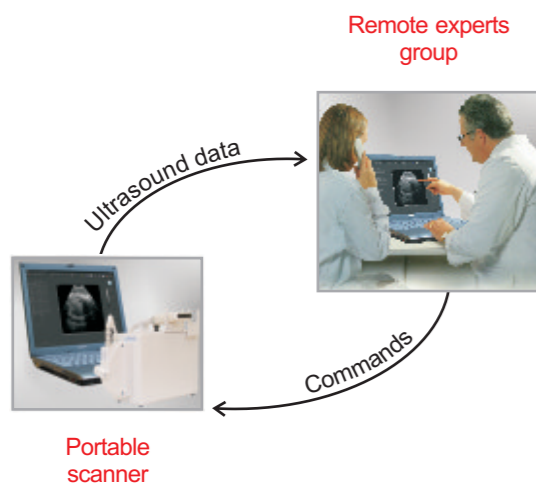
Original image

Processed image

The development made in ultrasound transducer technology is obviously related to the constantly increasing significance of ultrasound in diagnostic imaging. In medical industry, with its intricacy and continuous variation, we put all effort to keep up our technological competence.

That is why Telemed has been in the vanguard of the industrial progress since the early days, focused on indisputable quality, certain comfort and intuitive ease of use.

Telemed offers high resolution Convex, Linear and Endocavity transducers for applications from veterinary, abdominal, vascular and cardiac through to transrectal and transvaginal. All probes are carefully designed to position as close as possible near the anatomical structure of interest and to deliver optimum image quality in its product class.



**TeleView** is a software module designed so that the users of TELEMED ultrasound scanners could ask remote assistance from technical support or ultrasound expert center. Users can launch TeleView application from the investigation site together with Echo Wave ultrasound software. From a Remote PC supervisor can take control over ultrasound equipment by making necessary adjustments of a scanner, making measurements, writing and printing investigation's result, initiating a chat with a remote user. This module can be used also in LAN, for sending live images in the same hospital between different departments.

## Scanners Specifications

**LogicScan**

**Echo Blaster**

LogicScan devices are based on the latest developments of Telemed's engineers. Their key features include innovative hybrid beamformer, color and Power Doppler imaging modes with multi-beam receiving capabilities, and Pulsed Wave (PW) Doppler mode.

### PWD mode

- Display mode: Moving bar
- Wall filter setting: 16 settings
- Sample volume: 0.5 to 10 mm
- Audio output: stereo, through PC

### Color mode

- Velocity mode (CFM)
- Power Doppler (PDI)
- Directional Power Doppler (DPDI)
- Color priority control
- Angle steering for linear probes

Flexible, advanced, modular B/W units with attractive price-to-performance ratio. PC connectivity via USB port and light weight provides a true mobility, a real possibility to be everywhere you want with your ultrasound system.

## Common Specifications

### General

- Imaging modes: B, B+M, M, B+B, 4B, "FREEZE" mode, variable viewing area for frame rate maximizing, 6 steps
- Gray scale: 256
- Color scale: 256
- Scanning depth: max 235 mm
- Gain control: TGC 0-50 dB, overall gain control
- Power control: 8 steps
- 12 bits 40 MHz Analog-to-Digital converter
- Scanning method: electronic linear, electronic convex, electronic microconvex

### Functions

- Mouse / trackball / keyboard operation
- Image comment / save / recall browsing
- Unlimited programmable presets for clinically specific imaging
- Anatomical icons with probe position indicator
- The set of pre-defined skin schemes for software interface
- Direct e-mail sending function with image or video attachment via Internet
- Printing to system printer
- User-friendly pop-up menus and dialog boxes
- Standard TV output using computer's display adapter (option)

### Computer Requirements

- IBM PC compatible Desktop/Notebook/Tablet PC
- CPU Dual Core 1.2 Ghz or better
- 512 MB of RAM or better
- USB 2.0 interface
- Windows® XP / Windows® Vista

### Signal Processing

- Pre-processing
  - TGC control: 5 sliders 40 dB
  - dynamic range control: 30-120 dB, 6 dB/step
  - overall gain control
  - M - mode sweep speed control
  - acoustic power control
- Post-processing
  - variable frame averaging
  - brightness, contrast, gamma control
  - scan direction, rotation / up / down controls
  - negative / positive control
  - bi-linear interpolation
  - echo enhancement control
  - noise rejection function

### B mode

- Combined receive focusing
- Transmit focal zones: 4 minimum
- Image processing: smoothing, edge enhancement
- Dynamic range: 30-120 dB

### Ultrasound Software

- TELEMED Drivers Package
- Echo Wave software (B/W modes only)
- Echo Wave II software (B/W + Doppler modes)
- ClearView plug-in (optional, works with Echo Wave/Echo Wave II)
- 3DView plug-in (optional, works with Echo Wave)
- PanoView plug-in (optional, works with Echo Wave)
- SDK documentation / sample code (available by agreement)

## Probes for Echo Blaster 128 and LogicScan 128 scanners

Probe Type	Frequency (MHz)	Scanning Method	Field of View Degree/mm	Applications
<b>Convex</b>				
PV6.5/10/128Z	5.0-8.0	Convex R10	156	Small Parts, Vascular, Veterinary
C3.5/20/128Z	2.0-4.0	Convex R20	104	Abdominal, Cardiac
C3.5/40/128Z	2.0-5.0	Convex R40	75	Abdominal, Obstetrics, Pediatrics
C4.5/50/128Z	3.0-7.0	Convex R50	70	Abdominal, Obstetrics, Pediatrics, Small Parts
C3.5/60/128Z	2.0-5.0	Convex R65	59	Abdominal, Obstetrics, Pediatrics
<b>Linear</b>				
HL7.5/40/128Z	5.0-8.0	Linear 40 mm	39	Pediatrics, Small Parts, Vascular, Veterinary
HL9.0/40/128Z	5.0-10.0	Linear 40 mm	39	
HL9.0/60/128Z	5.0-10.0	Linear 60 mm	59	
<b>Endocavity</b>				
EC6.5/10/128Z	5.0-8.0	Convex R10	156	Transrectal, Transvaginal
EC8.0/10/96Z	6.0-10.0	Convex R10	156	Transrectal, Transvaginal
<b>Veterinary</b>				
LV7.5/60/96Z	5.0-8.0	Linear 60 mm	59	Veterinary
L3.5/170/96Z	2.0-5.0	Linear 170 mm	170	Food Industry

## Probes for Echo Blaster 64 and LogicScan 64 scanners

Probe Type	Frequency (MHz)	Scanning Method	Field of View	Applications
<b>Convex</b>				
PV6.5/10/64	5.0-7.5	Convex R10	156	Small Parts, Vascular, Veterinary
C3.5/20/64	2.0-4.0	Convex R20	104	Abdominal, Cardiac
C3.5/60/64	3.0-5.0	Convex R60	75	Abdominal, Obstetrics, Pediatrics
<b>Linear</b>				
HL7.5/40/64	5.0-7.5	Linear 40 mm.	39	Pediatrics, Small Parts, Vascular, Veterinary
LV7.5/65/64	4.5-7.5	Linear 60 mm.	59	Veterinary
<b>Endocavity</b>				
EC6.5/10/64	5.0-7.5	Convex R10	156	Transrectal, Transvaginal