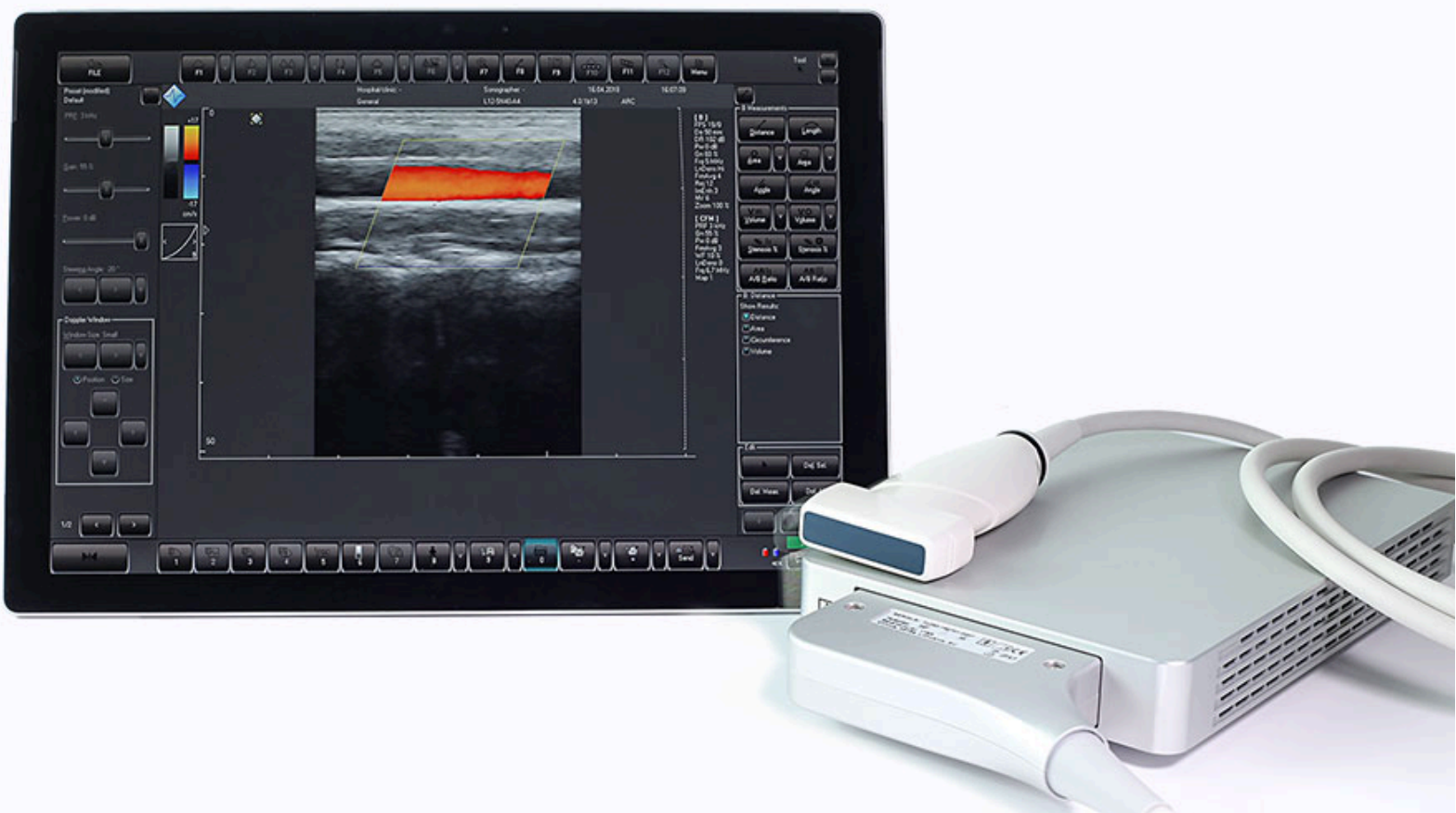


PC-BASED COLOR DOPPLER ULTRASOUND

ArtUs EXT-1H / EXT-2H

A compact USB 3.0 ultrasound beamformer that runs on your PC — with color Doppler, parallel beamforming and real-time access to RF data.



USB 3.0

High-speed connection to your PC

1 or 2 ports

EXT-1H or EXT-2H

1.5–18 MHz

Transducer frequency range

RF data

Open research access (option)

OVERVIEW

Two models, one powerful platform

ArtUs is TELEMED's most capable PC-based ultrasound system. The USB 3.0 link raises the scanning speed without compromising image quality and streams RF data to the PC in real time. WideView maximizes the viewing area of linear, convex and endocavity transducers, and ArtUs drives high-density, high-frequency transducers with a wide dynamic range.

ArtUs EXT-1H

Beamformer module with one transducer connector — compact, light and ready for daily clinical and research work.

ArtUs EXT-2H

Beamformer module with two transducer connectors, including simultaneous scanning with two transducers.



KEY FEATURES

Color Doppler

CFM, Power and Directional Power Doppler, PW Doppler, Duplex and Triplex modes.

Parallel beamforming

High frame rates for dynamic studies such as muscle movement and cardiac imaging.

Image quality

Tissue harmonic imaging, spatial compounding, B-steer and speckle reduction.

Dual scanning

ArtUs EXT-2H shows two live streams from two identical transducers at once.

Open for research

Real-time beamformed RF data with tools for C++, MATLAB, Python and LabVIEW (option).

Synchronization

I/O module with up to 6 trigger signals to and from external equipment (option).

IMAGING MODES AND FUNCTIONS

B, B+B, 4B

B+M, M

Two live B streams (EXT-2H)

B-steer

Spatial compounding

Virtual convex

Expanded view angle

Color Doppler (CFM)

Power Doppler (PDI)

Directional Power Doppler

Pulsed Wave Doppler

Duplex

Triplex

Tissue harmonic imaging (THI)

Inverted THI

Parallel beamforming

Strain elastography

Beamformed RF data

Highlighted items are available as options.

COMPATIBLE TRANSDUCERS

Transducers for every application

	MODEL	FREQUENCY	SPECIFICATIONS	APPLICATIONS
	MCV9-5N10-A3 Endocavity convex	5–9 MHz	Radius 10 mm · depth 30–150 mm	Transrectal, transvaginal
	MC8-4N14-A3 Microconvex	4–8 MHz	Radius 14 mm	Research Not for clinical use
	MC5-2N20-A3 Microconvex	2–5 MHz	Radius 20 mm	Research Not for clinical use
	C5-2H60-A5 Convex	2–5 MHz	Radius 60 mm · depth 30–300 mm	Research Not for clinical use
	C6-1H50-A5 Convex	1–6 MHz	Radius 50 mm · depth 40–400 mm	Abdominal, obstetrics, paediatrics
	L12-5N40-A4 Linear	5–12 MHz	Width 38.4 mm · depth 20–120 mm	Paediatrics, small parts, vascular, veterinary
	L15-7H40-A5 Linear	7–15 MHz	Width 38.4 mm · depth 20–100 mm	Research Not for clinical use
	P5-1S15-A6 Phased array	1–5 MHz	Depth 50–300 mm	Cardiac, abdominal
	LV8-4N64-A3 Linear, veterinary	4–8 MHz	Width 64 mm · depth 40–120 mm	Veterinary
	LF9-5N60-A3 Linear, wide field	5–9 MHz	Width 64 mm · depth 20–150 mm	Muscle movement studies
	LF11-5H60-A3 Linear, wide field	5–11 MHz	Width 54.6 mm · depth 20–120 mm	Muscle movement studies

Frequency bars on a common 0–16 MHz scale.

DUAL-TRANSDUCER SCANNING (EXT-2H)

Scan depth	View area 100%	80%	60%
40 mm	157 dual: 78 each	192 dual: 96 each	250 dual: 125 each
30 mm	180 dual: 90 each	221 dual: 110 each	286 dual: 143 each
20 mm	210 dual: 105 each	260 dual: 130 each	338 dual: 169 each

Frame rate, frames per second. Bold figures are single-stream. Measured with ArtUs EXT-2H, two LF9-5N60-A3 transducers, parallel beamforming mode and a single transmit focus.

IN THE BOX

- ArtUs EXT-1H or EXT-2H beamformer
- Micro-B to Type-A USB 3.0 cable
- Power supply, 100–240 VAC, 50–60 Hz (EN 60601-1), and AC cable
- Software and manuals on a USB stick

OPTIONS

- Transducers
- RF module — real-time beamformed RF data
- I/O module — synchronization with external equipment
- Strain elastography

TECHNICAL SPECIFICATIONS

Specifications

IMAGING MODES

- B
- B+B
- 4B
- B+M
- M
- B live+B live (two live simultaneous B-streams from two connected transducers), ArtUs EXT-2H only
- B-steer for linear transducers
- Compound for linear and convex transducers
- Virtual convex for linear transducers
- Expanded view angle for convex transducers
- Color Doppler (CFM)
- Power Doppler (PDI)
- Directional Power Doppler (DPDI)
- Pulsed Wave Doppler (PWD)
- B+PWD (Duplex)
- B+CFM/PDI/DPDI+PWD (Triplex)
- Inverted Tissue Harmonic Imaging (ITHI)
- Tissue Harmonic Imaging (THI)
- Parallel beam forming
- Strain Elastography, option
- Beamformed RF data access through SDK library and set of research software (Python, MATLAB, LabVIEW), option

DISPLAY PERFORMANCE

- ultrasound image size: automatically adjustable to screen resolution
- gray scale: 256
- color scale: 256 (scanners with Color Doppler mode)
- full screen and window modes
- full motion and full size real-time ultrasound imaging, up to 300 fps (depends on scanner model, selected scan depth, scan angle, focus mode, lines density setting, computer speed)
- cineloop recording/play: several thousands frames (depends on computer memory size and scan mode)
- zoom mode: from 60% to 600% in all modes (Scan, Freeze, B, B+B, 4B, Doppler modes, M-zoom, cine and etc.)
- viewing area variable for frame rate maximizing: 6 steps
- thumbnail mode: up to 32 images
- "Freeze" mode
- "Auto Freeze" mode

SCANNING METHODS

2-40 cm

TRANSDUCERS

from 1,5 MHz to 18,0 MHz

COLOR DOPPLER (CFM / PDI / DPDI)

- PRF values: 0.5-10 kHz
- angle steering for linear transducers: up to $\pm 25^\circ$
- gain control: 40 dB
- wall filter settings: 3 steps (5%, 10%, 15% PRF)
- real-time spatial filter: 4 values
- CFM palette: 10 maps
- B/Color priority control
- color threshold control
- CFM baseline control
- Doppler frequency selection: 2 or 3 frequencies / each transducer
- color frame averaging: 8 values
- Transparent Color Mapping (TCM): 10 values

PULSED WAVE DOPPLER (PWD)

- PRF values: 1-15 kHz
- wall filter settings: 16 steps (2%-20% PRF)

FOCUSING

- transmit: variable, 16 zones
- receive: point to point, dynamic

AUTOMATIC IMAGE OPTIMIZATION

- B-image gain
- B-Image dynamic range
- B-Image TGC sliders
- CFM/PDI/DPDI gain
- PWD baseline position
- PWD Invert
- PWD PRF

PROCESSING

- lines density control for better resolution
- TGC Control
- dynamic range
- overall gain control
- M - mode sweep speed control
- acoustic power control
- variable frame averaging
- brightness, contrast
- advanced gamma control, fixed and custom curves
- scan direction, rotation, up-down controls
- negative / positive control
- bi-linear interpolation
- echo enhancement control
- noise rejection function
- speckle reduction and structure improvement PureView, NeatView, QuickView
- iContrast (ArtUs, ArtUs Compact)
- Adaptive Gain (ArtUs, ArtUs Compact)

DICOM

- Verification SCU
- Modality Worklist (MWL) SCU
- Modality Performed Procedure Step (MPPS) SCU
- Store SCU (images, cines)
- Print SCU (grayscale, color)

For more information see Echo Wave II Software DICOM Conformance Statement

FUNCTIONS

- mouse / trackball / keyboard operation
- image and video save / load:
 - AVI ○ MP4 ○ JPG ○ BMP ○ PNG ○ TIF ○ XLSX
 - DCM (DICOM uncompressed) ○ DCM (DICOM-JPEG RGB/YBR)
 - DCM (DICOM-JPEG RGB/YBR Video) ○ TPD (Telemed Picture Data)
 - TVD (Telemed Video Data)
- unlimited programmable presets for clinically specific imaging
- vascular puncture guidelines
- biopsy guidelines
- brachytherapy/biopsy grids
- anatomical icons with transducer position indicator
- direct e-mail sending with image or video attachment via Internet
- DICOM file push to server
- printing on system printer
- TV output via computer display adapter
- multi-monitor support
- full screen and window mode

INTERFACE CUSTOMIZATION

- the set of predefined skin schemes for software interface
- the set of predefined buttons images
- multilanguage support, languages:
 - Chinese ○ English ○ French ○ German ○ Italian ○ Korean
 - Lithuanian ○ Magyar ○ Polish ○ Romanian ○ Russian
 - Spanish
- B+M, B+PW/CW layout position, size
- ultrasound area size
- font size

MEASUREMENTS AND CALCULATIONS

- General measurements and calculations: B and Color Doppler, M, PW modes
- PW/CW cardiology measurements and calculations

Human packages:

- General
- Musculoskeletal
- Obstetrics / Gynecology (OB / GYN)
- Gynecology (GYN)
- Abdominal
- Urology
- Endocrinology
- Vascular
- Cardiology

Veterinary packages:

Canine OB · Feline OB · Ovine OB · Bovine OB · Equine OB · Llama OB · Goat OB · Animal Cardiology

Full lists of measurements and calculations:

www.pcultrasound.com/products/products_ewii/

POWER

- external power supply, 100-240V AC, 50-60 Hz

DIMENSIONS AND WEIGHT

ArtUs EXT-1H:

- aluminium enclosure
- dimensions W x D x H, mm: 136 x 200 x 34
- weight, kg: 0.77

ArtUs EXT-2H:

- aluminium enclosure
- dimensions W x D x H, mm: 140 x 204.5 x 62
- weight, kg: 1.12

ULTRASOUND SOFTWARE

- TELEMED Drivers Package (32/64-bit Windows)
- Echo Wave II software (32/64-bit Windows)
- SDK documentation / sample code (available by agreement)
- Echo Wave II start-up time: 25 sec (i7 2.66 GHz, 8 Gb RAM)

RECOMMENDED COMPUTER CONFIGURATION

- Windows based computer
- HD/Full HD screen resolution, IPS technology
- CPU:
 - Intel i5/i7/i9 2.0 GHz or faster ○ Snapdragon ARM64
- 8 Gb RAM or more
- 256 Gb internal Solid State Drive (SSD)
- USB connector: USB 3.0 (Type-A)
- OS: Windows 10/11 (all versions 32/64-bit)

Let's find the right ultrasound solution for you

Request a quotation, ask about options and transducers, or find a TELEMED distributor near you.

ADDRESS

UAB „TELEMED“
Savanoriu pr. 178A
LT-02301 Vilnius
Lithuania

CONTACT

info@pcultrasound.com
+370 5 210 6272
+370 5 210 6273

ONLINE

www.pcultrasound.com
Request a quote