TELEMED

ULTRASOUND MEDICAL SYSTEMS

WE SEE PEOPLE A LITTLE DIFFERENTLY

Our story

Passion and Innovation via Ultrasound

Telemed was founded in 1992 in Vilnius, the capital of Lithuania, and quickly grew into a well-known manufacturer of portable ultrasound scanners and OEM components. Being passionate about personal computers, Telemed engineers designed the first PC-based ultrsound sysem in 1993, while dreaming that one day the customers would be able to use their own personal computers for ultrasound imaging. Telemed became an ISO-certified medical device manufacturer and issued its first EC declaration of conformity in 2003. In the same year customers began using our USB-connected ultrasound system connected to a computer via USB interface.

Telemed is a renowned manufacturer of OEM ultrasound solutions for medical, veterinary, and research applications. Our aim is to help the medical industry build integrated systems employing ultrasound imaging in combination with surgery, therapy and navigation equipment. Telemed's design ideas are proven to work in our own certified products. This also guarantees smooth integration with third-party products, as well as their respective testing and certifications.

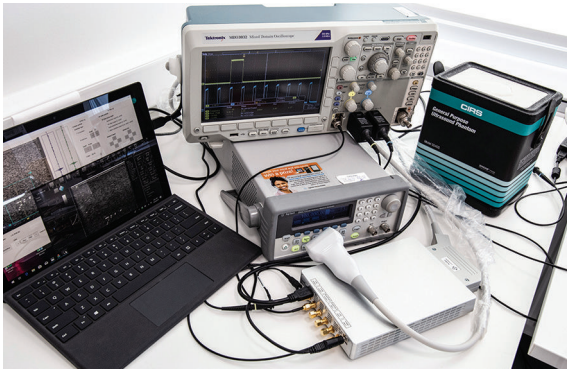
The uncompromising versatility, flexibility and performance inherent to Telemed systems are used and appreciated by doctors, engineers and scientists across more than 80 different countries.

ArtUs is an ultra-compact and powerful application-based ultrasound device. Featuring a high-speed USB 3.0 interface, it increases the scanning speed without compromising image quality, as well as provides real-time transfer of RF ultrasound data to a PC. The new "WideView" imaging mode maximizes the viewing area for linear, convex and endocavity transducers. Other features include an improved spatial compound available for linear and convex transducers, parallel beamforming, harmonics, B-steer imaging.

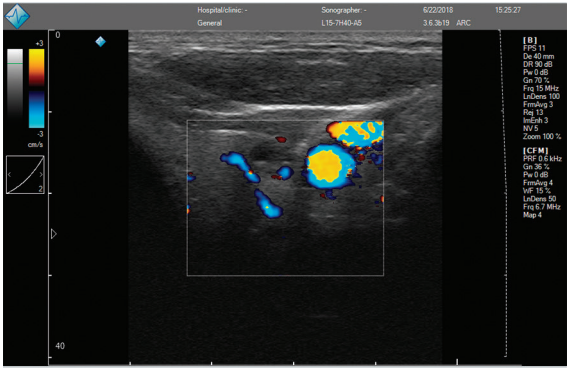
The system is capable of driving high-density and high-frequency transducers delivering detailed, rich and wide dynamic range images. Software features include Echo Wave® II with Speckle noise reduction as a standard package and an optional research package: an SDK library with advanced data processing and visualization procedures for the MATLAB environment.

ARTUS

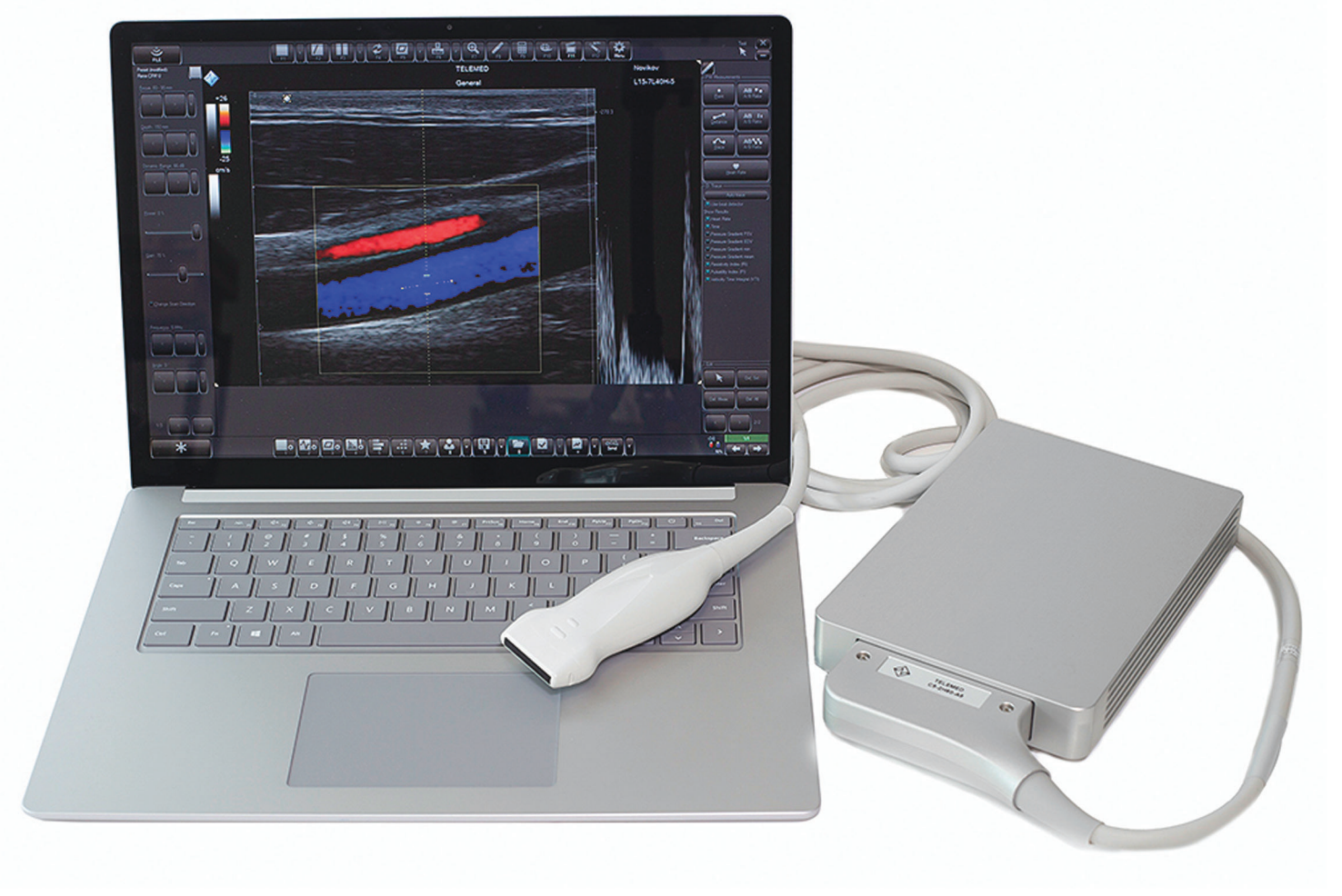
ArtUs is available with the following modifications:
ArtUs EXT-1H, a beam former module with a single probe connector and power supply;
ArtUs EXT-2H, a beam former module with two probe connectors and power;
Advanced synchronization (option), provides up to 6 trigger signals to/from external equipment through auxiliary connectors.



ArtUs supports a wide range of high crystal density, **multifrequency** wideband transducers from 1.0 to 18.0 MHz. In Parallel Beamforming mode, the system allows a very high frame rate. Telemedicine applications allow remote control of the system for remote consultation, application training and technical support, which includes free software updates. In its research version, it can be also configured with I/O synchronization and an RF modules.



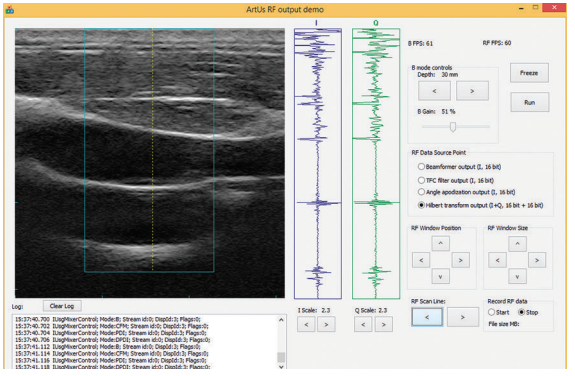
ArtUs is a result of Telemed pursuit of excellence combined with the adoption of the latest technological solutions: Full digital beamformer, Parallel Beamforming, Advanced Spatial Compound (linear and convex), Tissue Harmonics with Pulse Inversion technology (iTHI), WideView imaging (linear and convex), Advanced Speckle Reduction Imaging, Digital Doppler Multi-Beam Processing and Raw Data Processing.



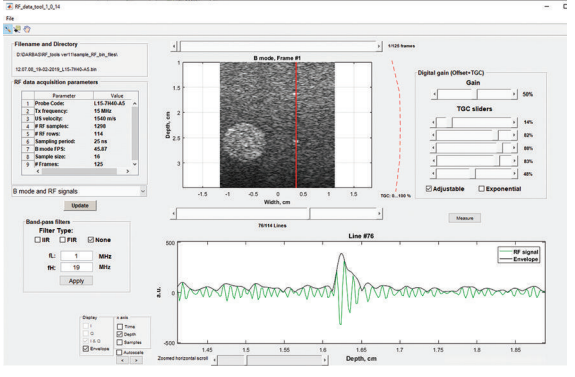
Telemed offers the tool for real-time RF data access (B-mode + RF Data) acquisition - RF Data Control and the packages for data processing, implemented in MATLAB, Python and LabView environments.

The SDK provides possibility to integrate various RF data processing methods into the system application. I/O Module in combination with RF Data access or alone is a unique and cost-effective tool for solving complex problem to synchronize the ultrasound equipment with other equipment in a research lab.

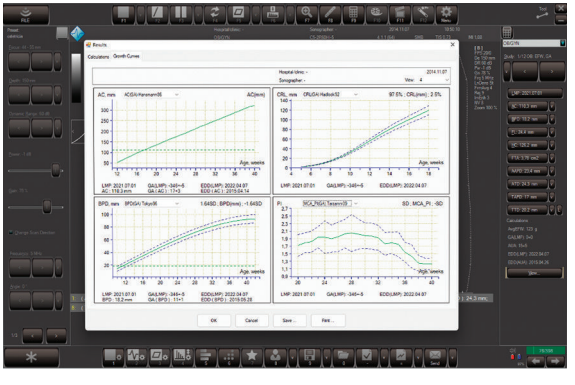
ARTUS



Most of the traditional ultrasound diagnostic equipment consists of closed systems and does not provide access to RF data (RAW data). ArtUs, being equipped with fast USB 3.0 interface, is an essential tool providing an easy access to ultrasound data prior to any processing. Beamformed and channel RF data contain an important information about acoustic waves and their interaction with tissues.



The information extracted from RF signals could be successfully used for a variety of purposes and is one aspect that is becoming increasingly important in ultrasound research, including elasticity imaging, tissue characterization, development of quantitative ultrasound imaging, beamforming techniques and other signal processing applications.



General measurements and calculations:
B-mode: distance, length, circumference, area, volume, angle, stenosis %, ect.;
M-mode: distance, time, velocity, heart rate, stenosis %;
PW Spectral Doppler: velocity, PG, PI, RI, ect.;
PW Doppler automatic tracing and calculations.

MICRUS

MicrUs is a new generation of a USB-powered pocket-size ultrasound imaging system. It offers ultrasound screening in B, M, B/M and Pulsed Wave Doppler modes together with Speckle Reduction Processing, Trapezoid and Spatial compound imaging.
Various transducers can be effortlessly connected thanks to advanced probe recognition technology. MicrUs is a fanless device so it's well suited for ultrasound-guided procedures.
The ultrasound scanner can be fully controlled remotely, providing possibilities for telemedicine and educational purposes.

Delivering Telemed quality and reliability, you can always expect more with the MicrUs EXT system. The platform comes with a variety of options and future free updates for long-term investment protection.

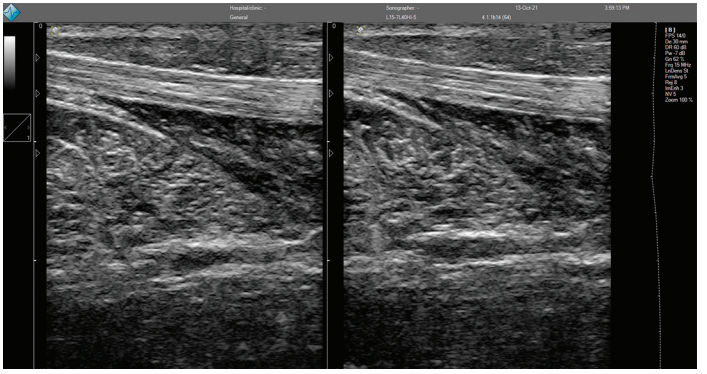
Combined with unique Duo type transducers MicrUs became an essential tool for universities and sport researchers who need to visualize muscles movements simultaneously more than at a single site with a high frame rate.

Applications: Abdomen, OB/Gyn, MSK, Urology, Small Parts, Anesthesia, Vascular access, Peripheral blocks.
Imaging Modes: B, 2B, 4B, BM, M, Pulsed Wave Doppler, B-Steer, Compound, Wide View, Zoom, B-mode simultaneous imaging (Option).

Recording and storing thousands of images and video files to a disk
as AVI, MP4, JPEG, BMP, PNG, TIFF, XLSX, DICOM, DICOM JPEG, Raw Data (TPD and TVD) files
Review, processing and measurement available on previously stored images and cine loops.

MICRUS

MicrUs is available with a wide range of high sensitivity transducers with frequencies from 2 to 15 MHz. Each transducer is carefully designed with the most advanced technology to provide high resolution, exceptional image quality, and to ensure reliability and durability.



Telemed offers a variety of service plans that suit the needs of different scientific and healthcare environments, delivering both superior support and valuable cost savings.
Telemed coverage options provide protection from unexpected costs as well as fast and attentive service.

Optionally available synchronization module further improves data precision allowing triggering external equipment from MicrUs device. Synchronization utility provided free of charge allows quick configuration of the functionality.

Transducers available for MicrUs allows a high image quality in general, abdominal, Ob/GYN, small parts, musculo-skeletal, urological ultrasound as well as ultrasound-guided procedures. Telemedicine applications allow remote control of the system for consultation, application training and technical support, including free software updates. In its research version, it can be configured with I/O synchronization options, free software development kits (SDK) for Windows® and Android® OS.

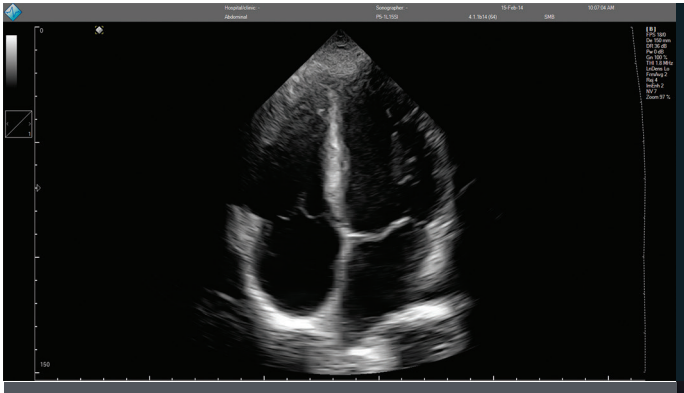
SMARTUS

SmartUs is the high-performance PC-based ultrasound Echo Color system. It includes pre-installed CW Doppler allowing examination of the velocities as high as 400 cm/sec.

Scanning modes: B, B+B, 4B, B+M, M, CFM Color Flow Mapping, PDI Power Doppler, DPDI Directional Power Doppler, PW Pulsed Wave Spectral Doppler, CW Continuous Wave Spectral Doppler, HPRF (High Pulse Repetition Frequency), Duplex (B+PW/CW),Triplex B+Color Doppler+PW/CW.

SmartUs is available with either one or three probe ports.

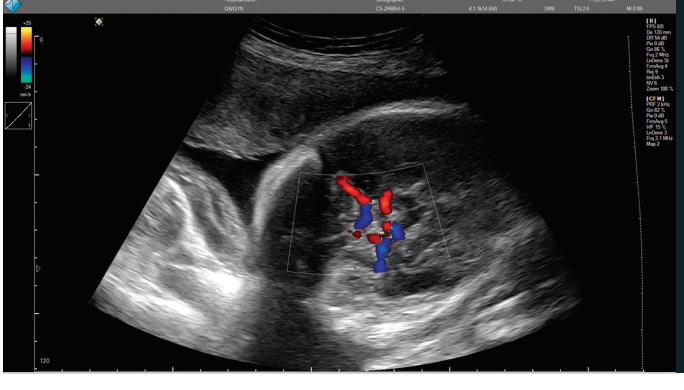
The system supports a wide range of high-density transducers, including single crystal arrays. The SmartUs system has bandwidth 1.0 MHz to 18.0 MHz and adopts Convex, Linear, Sector Phased Array, Endocavity, Biplane endorectal transducers.



Telemed's prostate biplane transducers:

- High density endocavity biplane with unique 7 cm linear and 200 deg convex views;
- High density prostate biplane with two convex views 130° each. Simultaneous real-time images of sagittal and transverse planes provide a clear indication for needle placement.

SmartUs includes the Telemed's latest technological innovations: Spatial Compound Imaging, B-Steer Imaging, WideView Imaging, iTHI - Tissue Harmonic Imaging with Pulse Inversion technology, High-speed software image Processing, Digital Doppler Multi-Beam Processing, One-Touch Image Optimization, Advanced Speckle Reduction Imaging, RAW-Data, Image Enhancement.



SmartUs EXT-1M Kit includes:
SmartUs EXT-1M beamformer, ultrasound transducer (optional), USB cable, 100~240 VAC, 50~60 Hz power supply (EN60601-1), AC power cable, software, assembly and set-up manual, operation manual (supplied on USB memory).

MicrUs PRO

MicrUsPro is an USB probe also referred as an “active probe”. The Market-proven and popular MicrUs technology is integrated within the USB Probe which can be connected to a PC, tablet or smartphone with Windows® or Android® OS.

MicrUs Pro is an indispensable tool for clinical procedures such as vascular access, sports medicine, emergency and critical care.

Echo Wave A® is a software developed for Android®-based mobile devices to provide customers two operational modes: simplified and advanced.

In simplified mode only important controls defined by the user are available, while advanced mode provides full control over system parameters.

MicrUs Pro is waterproof and meets IPX7 requirements, while it's USB cable can be detached during sterilization.

Other MicrUs Pro Echo Wave® II/Echo Wave® A features:

- Portrait and Landscape mode to match with tablet and mobile phone screens;
- Multi-language support;
- Power saving features;
- Automatic B-mode optimization;
- Free Telemed software upgrades ;
- SDK available upon request.

MicrUs PRO

Telemedicine applications allow remote control of the system for consultation, application training and technical support, including free software updates.

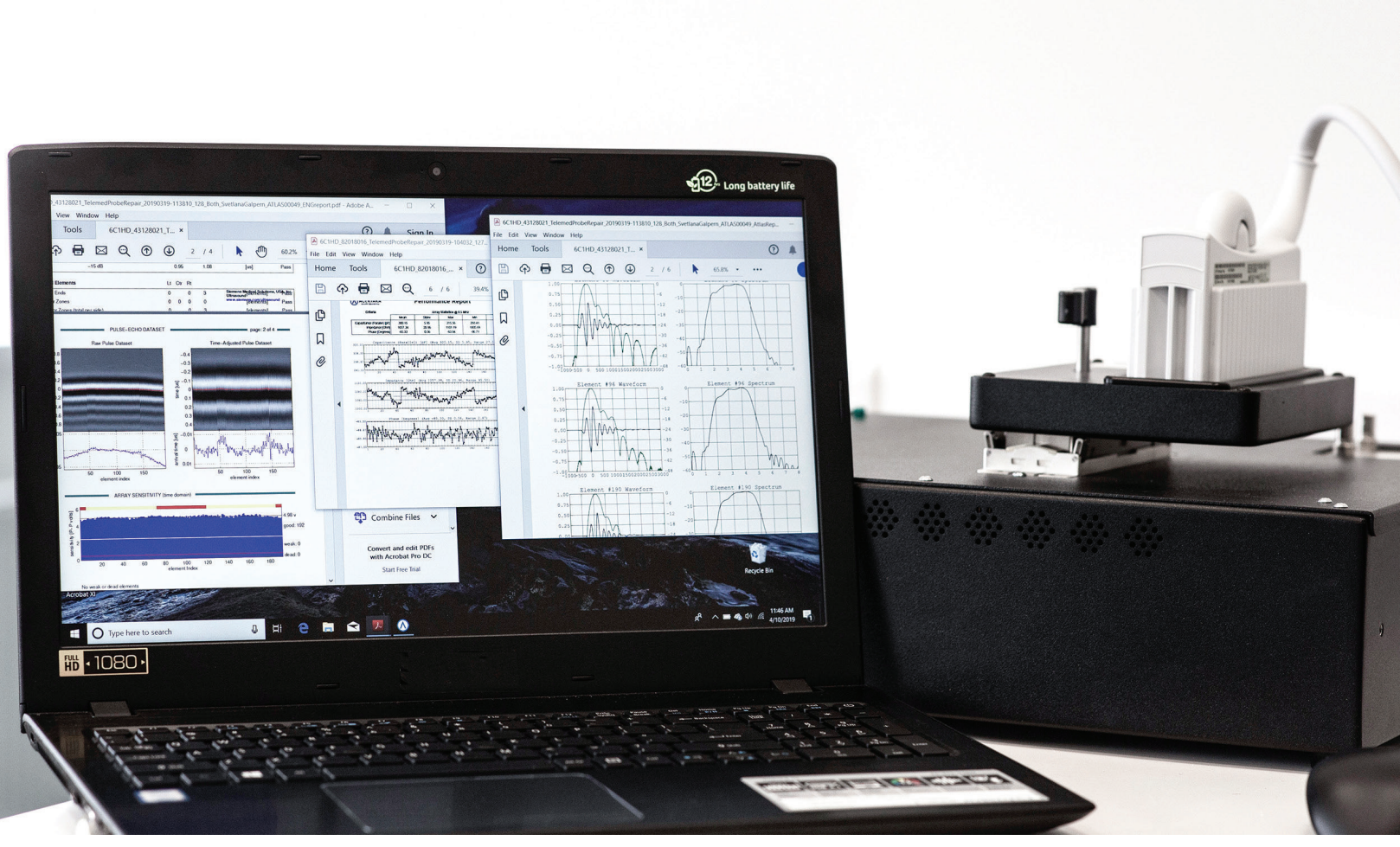
Software Development Kit (SDK) for Windows® and Android® provided by request.

Controlled by Echo Wave® II/Echo Wave® A software, MicrUs Pro provides in a smaller footprint of all features available for MicrUs system: measurement and calculation packages, reporting and image archiving / transfer to other devices, unlimited programmable presets, advanced image processing and noise reduction.

MicrUs Pro models:
- Micrus Pro-L40S linear array 40mm length, 5-12MHz;
- MicrUs Pro-L40N high density linear array 40mm length 0, 5-12MHz;
- MicrUs Pro-C60S Curved array 60mm radius, 2-5MHz.
Imaging Modes: B, 2B, 4B, BM, M, Zoom.
Linear transducer only: B-Steer, Compound, Wide View

Connection to PC, tablet and smartphone via USB C.

Applications:
General, abdomen, obstetrics, urology, endocrinology, vascular, MSK.
Desktop, notebook, tablet compatible Echo Wave® II GUI software, Drivers package.
Powered by USB C.
Lightweight - 0,2 kg.



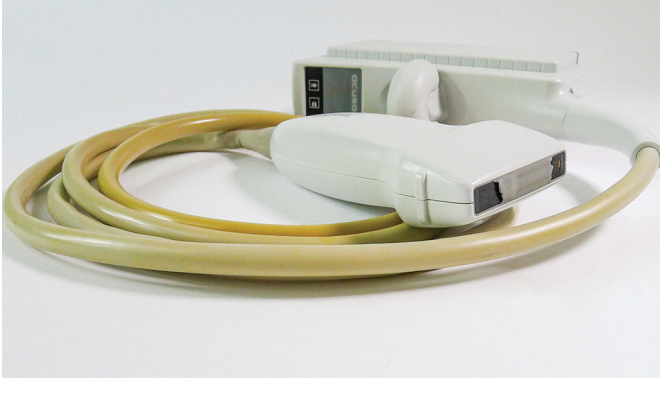
SERVICE

A proper care and regular testing of probes substantially affects the ultrasound system operating expenses. In fact, based on our experience, more than 70% of ultrasound service calls are probe related in one way or another.

Published studies have also shown that improperly functioning probes can seriously impact the results of the ultrasound examination. Probe failures, if discovered early enough, allow less costly repairs, potentially saving tens of thousands of dollars or Euro per year.

GENERAL AND ENDOCAVITY PROBE REPAIRS

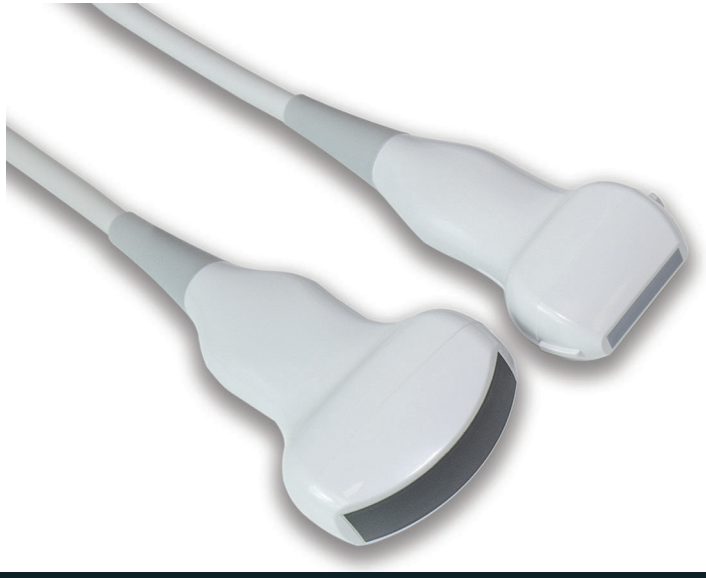
Lens replacement, Housing refurb or reseal, Srtain relief refurb, Cable jacket refurb repair, Connector housing repairs, Array replacement. Example probes are GE, Philips, Siemens, Toshiba, Sonosite and more.



TRANSDUCERS

Telemed offers a wide range of a new generation transducers, including high density, single crystal transducers, piezocomposite arrays with frequency range 1-20 MHz.

Telemed collaborates with independent transducer vendors to deliver the best possible image quality while keeping price reasonable. Each transducer is carefully designed with the most advanced technology to deliver high resolution, exceptional image quality, as well as to ensure reliability and durability. The variety includes not only linear, convex and sector arrays, but also biplane transducers for brachytherapy, special Duo type and custom designed transducers.



C6-1 broadband high sensitivity single crystal abdominal convex.
Radius 50mm, frequency range 1-6MHz.
Superior sensitivity, excellent for harmonic imaging.

L18-7 high density broadband linear transducer for MSK, vascular, neck, breast examinations
7-18MHz, 30mm.

P5-1 single phased array transducer for adult cardiac examinations.

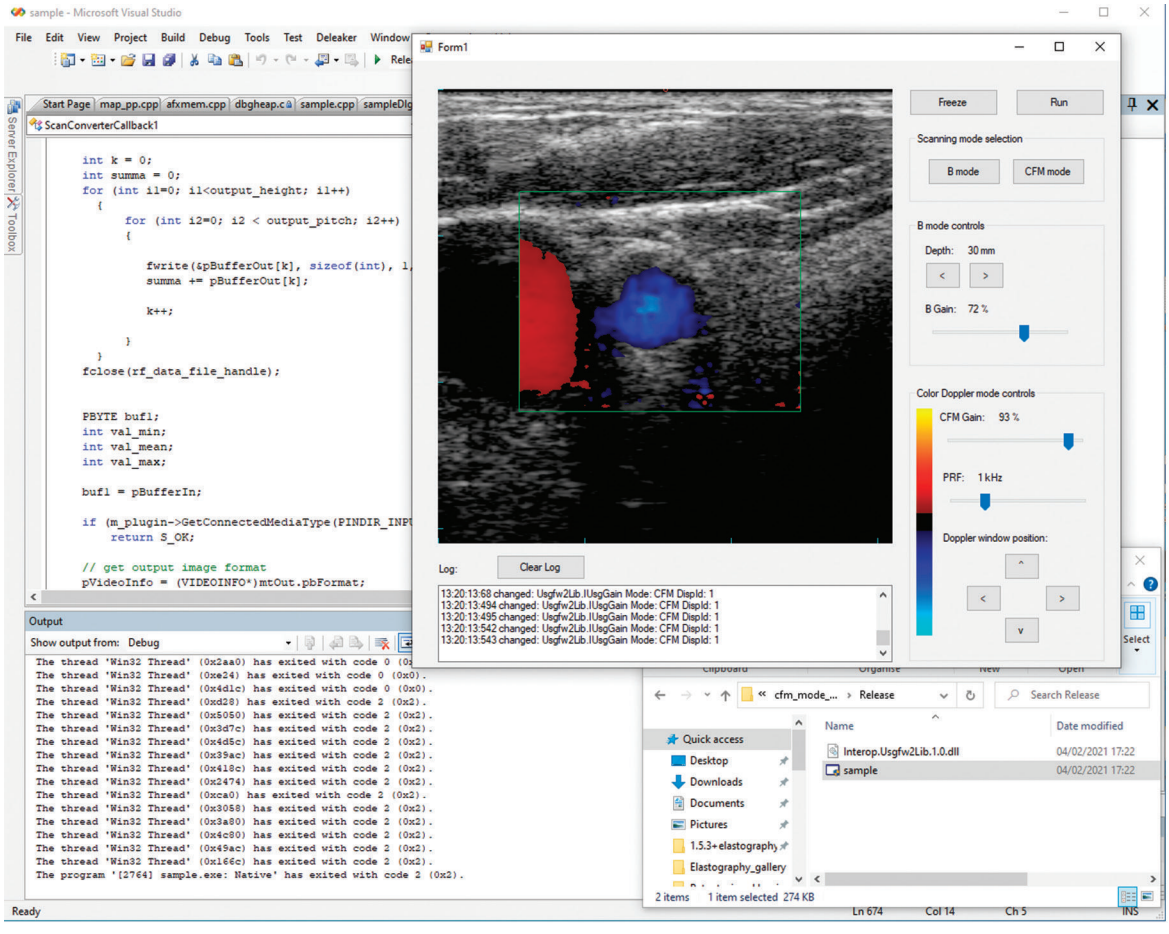
LF11-5 linear high density transducer for use for ultrasound imaging during dynamic exercise. In combination with special ProbeFix holder can be used in sports training, muscle recovery, rehabilitations, muscles monitoring while running or cycling.

OEM

Ultrasound system development involves some of the biggest electronic and software design challenges. Telemed possesses a unique expertise in device design, development and manufacturing with more than 25 years of experience in producing compact, reliable and easy-to-use ultrasound systems. More than a half of Telemed annual revenue comes from the customers who are an Original Equipment Manufacturers.

OEM beamformers developed, tested and certified as a part of Telemed's own medical ultrasound scanners and the related documents are available for OEM partners. The use of Telemed's ultrasound transducers further decrease time-to-market: expensive and time consumable acoustic and temperature tests already performed and documented. OEM modules can be adopted to customer's requirements, including motorized 3D probes, high element count arrays and custom-designed ultrasonic transducers.

SDK



Telemed's software development kit (SDK) offers an easy and a fast way to develop a customised user interface for ultrasonic imaging systems, application-specific devices or to add ultrasound capabilities to an existing equipment. The SDK contain runtime libraries API documentation and examples covering the most important system controls.

SDK employs unified interface to Telemed's beamformers allowing rapid development of custom User Interface without requiring a deep knowledge of the ultrasound beamformer technology. Developers can focus on design of the user interface, while USGFW II controls a beamformer. Our SDK is available for Windows® and Android® platforms.

Free SDK package contain: SDK guide for programmers; Reference manual for advanced users (Windows® only); Runtime libraries; Header files; Sample applications with source codes implemented in different programming languages.

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