PhotoSound®
Imaging and Data Acquisition Solutions

Build the best data acquisition platform powered by PhotoSound®

MoleculUS™

Ultrasonic Imaging with Chemical Analysis

PhotoSound Technologies, Inc. and Telemed, UAB are proud to announce their first jointly developed product. MoleculUS™ combines photoacoustics, PhotoSound's core competence, with the ultrasound core competence of Telemed.

The system features 256 photoacoustic channels of data acquisition where 128 channels can be switched between the ultrasonic beamformer and photoacoustic acquisition. The system collects photoacoustic signals while being optically triggered by the laser source and performs ultrasound imaging in between laser pulses.

The available US imaging modes are B(2D), M, Color Doppler, Pulsed Wave Doppler and are pre-set. Raw Frequency (RF) data can be accessed in both modalities. The system comes with a software development kit (SDK) that allows customization of the device software and graphical user interface. There is a linear, as well as, a micro-convex probe available as add-ons but the system is configurable for custom probes. Standalone control software based on MATLAB® and backend SDK written in C++ compatible with many frontend languages such as LabView, MATLAB® and Python™

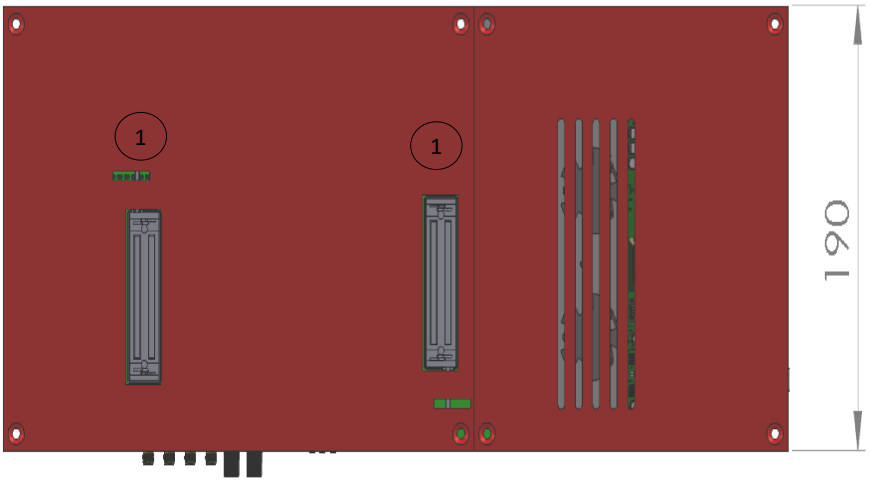
Acoustic Intensity	Less than 720 mW/cm², in compliance with requirements of the standard IEC 60601-2-37.
Acoustic Power Output	Less than 2.16 W
USPA Channels (1)	128
PA Mode Programmable Gain (2)	46 to 91 dB
Transducer Center Frequency (3)	1 to 18 MHz
Sampling Rate	40 MSPS
PA Mode Input Impedance	40 kΩ
Input Connector (4)	Cannon QLC-260
Available US Modes	B(2D), M, Color Doppler, Pulsed Wave Doppler

(1) Configuration with extra 128-channels for PA mode only is available (increases housing size)

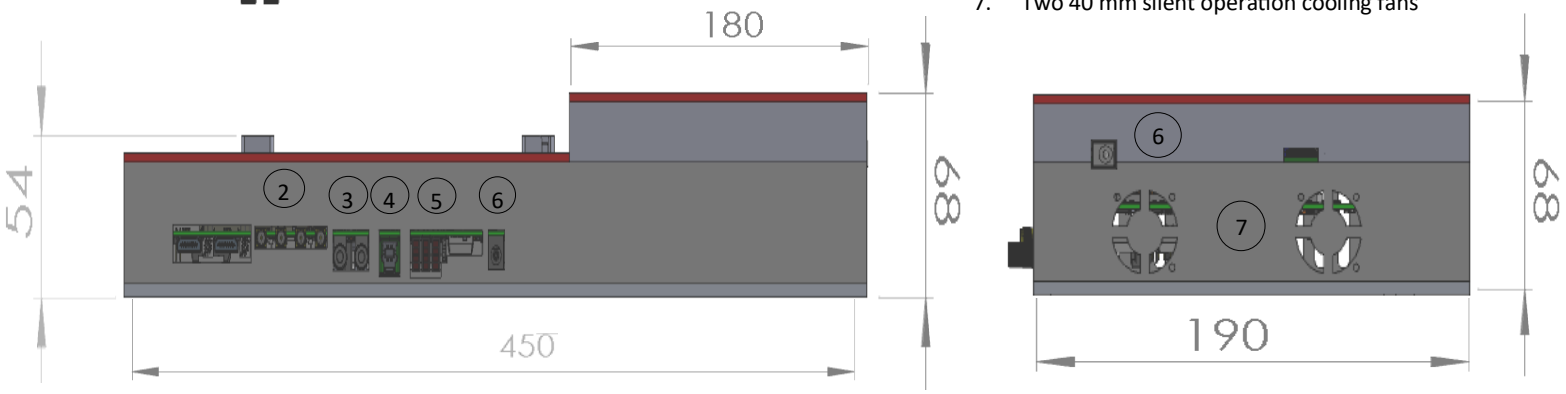
(2) Measured with 50Ω load (actual gain depends on probe capacitance)

(3) See list of available US probes or ask about third-party probe compatibility and optimization

(4) Additional connector for extra 128-channels for PA mode only (128-channels per connector)



1. Two medical grade Cannon QLC-260 probe input connectors for both US and PA modes
2. Two sets of programmable electrical trigger input and output (isolated SMA connectors)
3. Two optical trigger inputs for connecting patch fibers allow precise triggering from external light source
4. USB 3.0 port for high data transmission
5. Status and diagnostic LEDs
6. Two 12VDC 5A (PA mode) and 2.5A (US mode) power connectors (power supplies included)
7. Two 40 mm silent operation cooling fans



All dimensions approximate in millimeters (mm). Weight 7.2 lbs (3.3

Probes

A variety of probes are available that offer high resolution convex, linear, phased array and endocavity transducer configurations for applications in veterinary, abdominal, vascular, cardiac, transrectal and transvaginal USPA imaging. The probe is an integral part of MoleculUS™ as it enables the best USPA image quality.

Minimum PC Requirements: 6th generation Genuine Intel® quad-core processor, 8 GB DDR4 RAM. USB3 port on Intel® host controller, 500 GB PCIe 3.0 x4 SSD w/ heatsink, Microsoft Windows 10 64-bit Home

Recommended PC Requirements: 9th generation Genuine Intel® hexa-core processor or better, 16 GB DDR4 RAM, USB3 port on Intel® host controller, 1 TB PCIe 3.0 x4 SSD w/ heatsink (e.g. Samsung 970 Pro), Microsoft Windows 10 64-bit Pro

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