



**Portable, Flexible and Dependable**



Ultrasound Imaging System

# Introduction

ASUS Ultrasound Imaging System (Model: LU700) is a software-based ultrasound solution enabling qualified and trained healthcare professionals to visualize anatomical structures and fluid. Easy-to-use interface and handheld availability meet requirements of use in clinical purposes and home/ community healthcare environment.

## Applications

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- Abdominal
- Cardiac
- Obstetrical/Gynecological
- Musculoskeletal
- Vascular
- Soft tissue
- Superficial
- Small organ (Breast/Thyroid)



# System Overview

## System Architecture

- 12 bit ADC with sample rate 50MHz
- 32 channel ADC system
- Adjustable FPS design
- Wireless (Wi-Fi)/ wired USB3.0 transmission
- Battery continuously operating time up to 4 hours, Charging 2 hours to 60%. Full charging time 5-6 hours

## Imaging Modes

B mode

M mode

Color Flow

Power Doppler

PW Doppler

## Imaging Parameters and Functions

Depth

Freq

Gain

Persistence

Enhancement

C mode TGC

Dynamic range

Gray Map

Freeze Timer

Color PRF

Color Sensitive

Color Angle



# Workflow

## APP Home Page

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- Quick access to scan via QR code
- Create patient profile
- Probe connection review

## Cineloop Review

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- Images for retrospective review and image selection/save
- Acquisition and storage depend on compatible smart device memory

## Output Display

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- Menu
- Scan modes
- On-screen display of parameters
- Freeze
  - Annotates/Body mark/Save image/Measure/Make video
- Clinical application presets\*
  - LU700L (Linear, L10-5): 6
  - LU700C (Convex, C5-2): 7
  - \*allow to create own preset

- Scan Info.
- Mechanical Index (MI)
- Thermal Index (TI)
- Depth
- Adjust TGC
- On-display centerline marker
- Save image and video
- Full screen
- End exam
- Battery status icon

## Exam Documentation

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- Wi-Fi uses include DICOM networking, exporting exams/images, and network shared drive connection for specific server/cloud
- USB port uses include connecting the transducer, supporting data transfer and charging

## Connectivity

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- Data storage on device
- Configurable barcode reader APP
- DICOM image store
- Extensive image management capability (ASUS DICOM Viewer)
- Able to export in PC format (MP4/PNG/JPEG images) via direct/indirect connection to PC

# Probes



Probes	LU700L	LU700C
Types of array	Linear	Convex
Frequency	5-10MHz	2-5MHz
Depth	6cm	18cm
FOV	N/A	60°
Weight	357g	388g
Dimensions	178 x 74 x 40 mm	187 x 74 x 40 mm
Application		
Abdomen		⊙
Abdomen difficult		⊙
Renal		⊙
GYN		⊙
OB Mid Late		⊙
Bladder Meas		⊙
Peripheral vessels	⊙	
Thyroid	⊙	
Breast	⊙	
Superficial	⊙	
Musculoskeletal	⊙	
Carotid	⊙	
FAST		⊙

# Physical Specifications

## Product Classification

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- The device with transducers: Class IIa/ internally powered ME equipment
- Transducers: Type BF applied parts, IPX1

## Battery

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- UN 38.3, Lithium Battery Transportation
- EN IEC 62133
- Rechargeable 6000mAh Li-ion Battery

## Acoustic Standards

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- EN IEC 60601-2-37:2008/AMD1:2015, Medical electrical equipment, Part 2-37, Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment

## Biocompatibility Standards

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- EN ISO 10993-1:2009, Biological evaluation of medical devices
- EN ISO 10993-5:2009, Biological evaluation of medical devices
- ISO 10993-10:2010, Biological evaluation of medical devices

## Safety Standards

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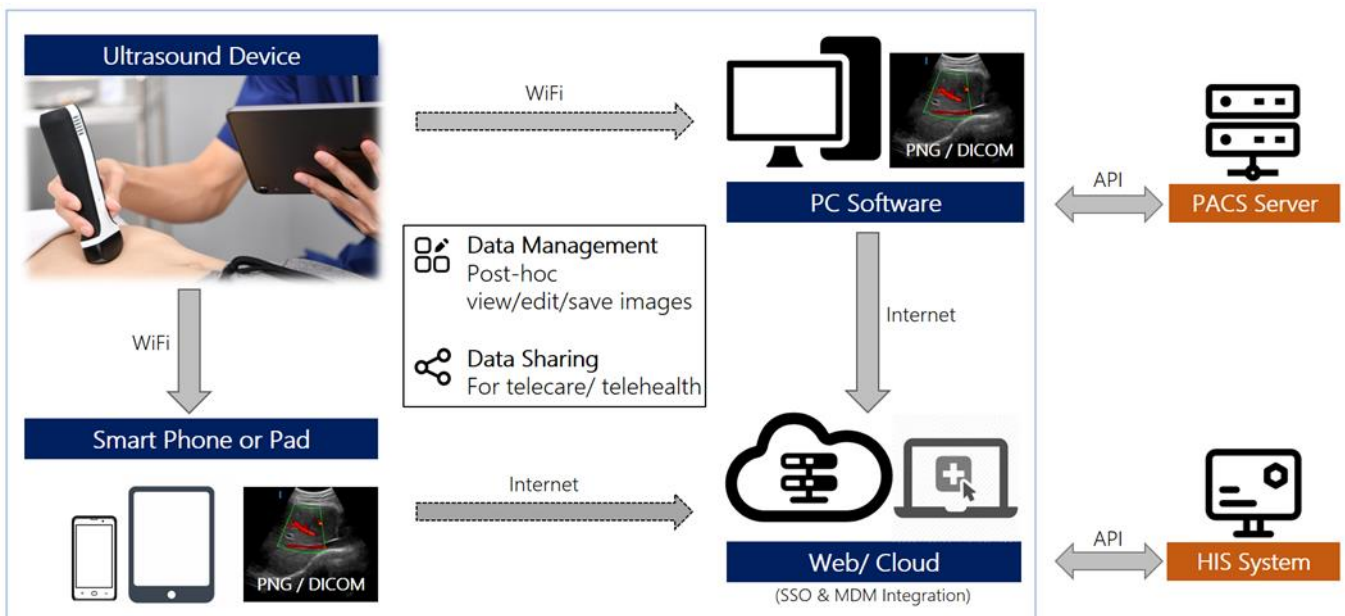
- IEC 60601-1:2005+AMD1:2012 / EN 60601-1 :2006+ A1 2013 CSV Medical electrical equipment, Part 1: General requirements for basic safety and essential performance
- IEC 60601-1-2: 2014 / EN 60601-1-1 :2015 Medical electrical equipment, Part 1-2: General requirements for basic safety and essential performance, Collateral Standard: Electromagnetic Capability - Requirements and tests
- AIUM/NEMA UD 2- 2004 2009 NEMA Standards Publication UD 2-2004 (R2009) Acoustic Output Measurement Standard for Diagnostic Ultrasound Equipment, Revision 3. (Radiology)
- AIUM/NEMA UD 3- 2004 2009 NEMA Standards Publication UD 3-2004 (R2009) Standard for Real-Time Display of Thermal and Mechanical Acoustic Output Indices on Diagnostic Ultrasound Equipment
- EN IEC 62304 2006 Medical device software - Software life cycle processes
- IEC 62366-1: 2015/EN 62366-1:2015 Medical devices, Application of usability engineering to medical devices
- IEC 60601-1-6 / EN 60601-1-6 Usability
- ISO 15223-1 2016 Medical devices - Symbols to be used with medical device labels, labeling and information to be supplied
- ISO 13485 2016 Medical Devices - Quality Management Systems - Requirements for Regulatory Purposes

# ASUS PACS Platform

ASUS PACS Platform is a flexible solution, including Android app, iOS app, Window app and web-based app. It's a comprehensive management tool for medical professionals that brings flexibility, simplicity and mobility to POCUS (point-of-care ultrasound).

## Overview and Data Flow

- Flexible applications: PC Software (Windows app), web-based app, Android & iOS app
- Collecting the ultrasonic images via ASUS portable ultrasound device, and transferring the data to Android / iOS / Windows through WiFi
- Enabling to save the data in ASUS web-based app which support DICOM or PNG data format. Images can be shared to other medical professionals for telemedicine service or medical education
- ASUS web-based app also meet the standard of HIPPA and ISO 27001 for data security control



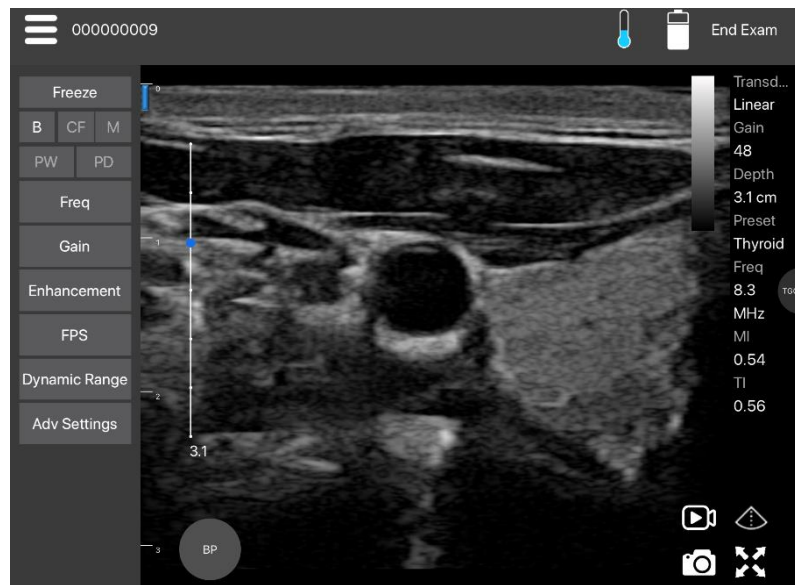
# LU700 series app specs

## iOS, Android and Windows App

- Annotation and measurement, save , restore and playBack : Freeze/live
- Parameter tuning: Parameter tuning & select the scanned position of a body Image saving
- Parameter tuning, image display and gesture: B, M, CF, PD, PW mode
- Image saving: Save the image file in APP (DICOM, PNG, JPEG data format)
- Make video: Provide real-time video records for medical professionals doing scan exam.
- Data transfer to HIS system: Depend on customers' request, the DICOM/PNG/JPEG file can be transferred from the mobile/windows/web-based platform to HIS system via API

## Minimum Spec Requirement

- iOS
  - iOS 11 or above
  - iPhone 7 or above
  - iPad 3 or above
- Android
  - OS: Android 7.0
  - CPU: Snapdragon 650 or above
  - RAM: 4G or above
- Windows
  - OS: Windows 10 1803 or above
  - CPU: Intel core i5-8265U/ AMD Ryzen 5 2500U (Minimum)
  - Intel core i7-10850H/AMD Ryzen 7 4700U (Recommended)
  - USB support
  - 2.4G Wi-Fi support
  - RAM 8G or above





# User Scenario

ASUS Portable Ultrasound Solution is a smart point-of-care ultrasound device that integrates seamlessly via mobile app or web platform. Small in size, it is ideal for **Healthcare facilities, Home- and Community-Based Services or Ambulance.**



## Solution

- ASUS wireless portable ultrasound device
- 4G/5G smart phone or pad (android, iOS, Windows) or gateway
- ASUS telemedicine platform

