

TECHNICAL SPECIFICATIONS OF HIGH END ULTRASOUND SYSTEM

Sl. No.	
1.	High end system capable of performing Obs-Gyn, Abdominal, Vascular, Cardiac Small parts Musculoskeletal examinations .
2.	The system should have following modes: 2D, M mode, PW, Color flow imaging, Directional color power angio imaging, Anatomical M mode, Pulse inversion harmonics, tissue Doppler imaging, duplex, Triplex, 3D, 4D imaging. The systems should be upgradable to fusion imaging.
3	Minimum 21" High Resolution non-interlaced flat monitor display.
4	Minimum 10" touch screen.
5	More than 3,00,000 transmission channels.
6	The system should have at least 4 active transducer ports.
7	Cine for 256 frames and Loop review .
8	System should dual live mode or equivalent.
9	System should have Panoramic view.
10	System should have Auto IMT facility.
11	System should have minimum 256 grayscales.
12	System should have minimum 1000 fps frame rate.
	System should have minimum 30 cm scanning depth
14.	All transducers should have Broad Bandwidth Beamformer technology for high resolution 2D imaging.
15.	System should have Tissue Harmonic Imaging.
16.	System should have software for noise and artifacts reduction that improves conspicuity and margin definition.
17.	Dynamic range of 180dB or more.
18.	System should have auto optimization features and auto quantification of Doppler parameters in real time and freeze mode.
19.	Pan zoom on freeze and live mode.
20.	Facility for independent steering on B mode and Color mode.
21.	Easy to use control panel with up-down & sideways movement with alphanumeric keyboard.
22.	System should have image management software. Image should be able to stored, retrieved, transferred and can be viewed in thumbnail.
23.	System should have minimum 500gb image storage facility.
24.	System should have DVD/Cd R-W and USB port for image transfer
25.	System should have DICOM facility.
26.	The system should have measurement package for General Imaging, Obs-Gyn, Vascular, cardiac imaging Musculoskeletal imaging.
27.	System should have contrast imaging.
28.	The system should be upgradable to Fusion technology.
29.	The system should be US FDA approved.
30.	Following Probes should be quoted; <ol style="list-style-type: none"> a. convex probe 2-5 MHz b. Linear probe for superficial imaging 5-16 MHz c. Micro convex d. Phase array mode 2-5 MHz e. TEE probe
31.	System should be upgraded with free software upgrade from time to time.
32.	Data sheet of the system should be provided along with the quote.
33.	System spares and service should be available for next 7 years from the date of purchase.
34.	Thermal printer and a DICOM Color printer to be supplied. Both should be compatible with the system.
35.	Air condition of a good quality of 1.5 ton to be provided.
36.	Examination couch & Operator chair should be supplied.

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Technical Specifications of **Portable color Doppler Ultrasound Unit**:-

A state of art fully digital, compact portable Colour Doppler Ultrasound machine with pin less connector is required with following technical features.

1. The unit must be compact, portable and lightweight, weighing less than 5 kg.
2. Imaging modes Real time 2D, Colour Doppler, Power Doppler, Pulsed wave Doppler, continuous wave Doppler (on all cardiac transducer), Tissue Doppler pulsed Wave Doppler (TDI PW) must be available.
3. Unit should be able to give very high image quality with advance technologies for better tissue differentiation and edge detection, equivalent to high end cart based systems.
4. System should be able to support speckle reduction imaging for better tissue differentiation and edge enhancement.
5. The system shall have the ability to enhance tissue margins and improve contrast resolution by reducing artifacts and improving visualization of texture patterns & needle tip within the image, please specify the technology.
6. System should have both online (Read)as well as offline (Write)zoom facility
7. Imaging modes of Real time 2D, Colour Doppler, Pulsed wave Doppler, continuous wave Doppler, Power Doppler must be available on all cardiac transducers.
8. System must have fast start up to scanning in less than 30 seconds from off condition, for use in critical and emergency situations.
9. System should support transducer technologies like phased array, convex, linear, TEE etc.
10. Cine memory on all modes.
11. The system shall process a dynamic range that is at least 165db. The system must display at a maximum depth of 35 cm.
12. Unit must be sturdy, resistant to breakage & damage on fall/hit against the wall or hard surface. The certificate must be attached.
13. Flat LCD/TFT/LED monitor of at least 10 inches with flicker free image.
14. Alphanumeric soft keys keyboard with easy access scans controls, facility to sanitize the system keyboard to avoid cross contamination.
15. The system must have the ability to function by AC/DC or battery power with the same degree of functionality , the battery life (run time) shall be at least 2 (Two) hours.
16. The system must have archive capability for storage and
17. Data Transfer facility should be available as standard, to transfer images etc. easily onto another system/computer etc.
18. System should possess software for Enhanced Needle Visualization to track the needle clearly at steep angles during the procedures while maintaining striking image quality of the target structures and the surrounding anatomy with simple On/Off functionality.
19. The system shall support the all DICOM functionality, Storage, Print, and Work List, already to connect to PACS.
20. The equipment should be mountable on trolley & locking mechanism should be inbuilt into the trolley for safety & security of the system.
21. Unit should be USFDA or European CE Certified.
22. The unit, transducers and all accessories should be covered with comprehensive onsite warranty for five years commencing from the date of issue of installation certificate.

Transducers & accessories to be supplied as standard:-

1. 4-13 or more MHz Multi –frequency, broadband Linear array transducer for vascular, nerve imaging with less than 40 mm size for vascular access, small parts, vascular, musculoskeletal interscalene, supraclavicular, Axillary, Musculocutaneous, Higher frequency will be referred.
2. 2-5 MHz multi frequency broadband curved array transducer for general purpose, abdominal, deep nerve access Specially Subgluteal & abdominal application.
3. 5-1 MHz phased for heart examination (Cardiac Transducer)

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