

TENDER SPECIFICATION OF PORTABLE ULTRASONOGRAM MACHINE WITH VASCULAR PROBE BNS UPASHAM

1. Name of Equipment. **PORTABLE ULTRASONOGRAM MACHINE.**
2. Purpose. To be used Radiology Department.
3. Quantity. 01 (One) Complete set.
4. Make /Model. To be mentioned.
5. Brand: To be mentioned.
6. Name of Manufacturer. Name and full address of manufacturer is to be mentioned.
7. Country of Origin: USA/ Canada/ UK/ EU/ Japan/ Australia/ South Korea.
8. Manufacture of Country: USA/ Canada/ UK/ EU/ Japan/ Australia/ South Korea.
9. Port of shipment: Shipment to be made from the manufacturing Country.
10. Qualification of Bidders: Bidders must be enlisted in NSSD Dhaka
11. Year of Manufacture. 2022 or later.
12. Source of Supply: Bidders/Suppliers are to be mentioned the name, address and contact details of original source from where goods would be imported. Any software required for installation or proper operation of the equipment is to be provided with original CD.
13. Price without import duties: Quoted price is to excluded all import duties as those will be consigned against BN.
14. Ambient Condition. The **Portable Ultrasonogram Machine** will be operated and maintained in the following ambient conditions:

a.	Ambient air temperature	5°C - 45°C
b.	Relative humidity	Up to 95%
15. Scope of Supply: 01 (One) complete set of **Portable Ultrasonogram Machine** will have to be supplied with all attachments, accessories etc and complete in all respect for immediate operation.

16. Technical Specification:

Technical Facilities: Technical facilities are as under:	
a.	The System fully Digital 4D Color Doppler ultrasound system that suitable for Radiology, Abdominal, OB/GYN, Neurology, Urological, Peripheral vascular, Thyroid, Small parts, Cardiology and Internal medicine etc.
b.	The system should be Improving Expandability by advanced processing of software. Arranging frequently using buttons on operation panel to be aside of bed, which enable to make diagnosis easier and Possible to assign Measurement Menu on Keyboard, which enable to flexible and smooth diagnosis.
c.	The system should have designing inlet port at upper side to reduce inside dust accumulation for reducing running costs of maintenance & should have high quality image techniques like 3rd generation harmonic, Adaptive Image Processing, DDD for understanding blood flow, eFlow & Hi Zoom etc. to differentiate tissues clearly & reducing speckle noise.
d.	The System should have light weight. Weight : To be mentioned.
Technical Features: Following technical features are to be available:	
a.	The System should have 4D function to visualized 4D Images by using Abdominal 4D Probes.
b.	The system should have 3rd generation harmonic (Broadband Harmonics) technology to get better & uniform images from near to far fields.
c.	It should have Adaptive Image Processing and Edge Enhance function as standard to reduce

e. Directional flow should be available in the system with all probes that has better resolution to allow easy understanding of blood flow orientation.
f. Minimal color velocity range : from 0.6cm/sec, so that lower blood flow such as vascularity in tumor can be visualized.
g. Tissue Doppler Imaging (TDI) should be available.
h. Facility should have to use TEE & Linear Bi-plane trans-rectal probe when required.
j. Compatible with Physiological Signal Display Unit, Automated NT measurement & IMT Auto Measurement function & Free Angular M-mode
k. The system should have Wider angle (not less than 180 degree) to display whole prostate hypertrophy or other hypertrophy.
l. Auto modulation of Panel LED Brightness should be available.
m. Auto Angle correct on Doppler mode should be available.
n. The system should have microFlow imaging technique to detect slow & weak blood anatomy in tissue.
p. The system should design with the sophisticated 3E Platform with Multi processing high-speed digital beam former for simple operation to assist efficient examination
q. The system should have strain based elastography for breast & thyroid.
r. The system should have shear wave elastography for liver The system should have external light source from different angle to see clearly the anatomical position of different organ.
s. The system should have transparent imaging facilities to see cystic or fluid area of different organ.
t. The system should design with the sophisticated 3E platform with multi processing high speed digital beam for simple operation to assist efficient examination.
u. The system should carry out multiple archives by one button simultaneously (ex: print and store on HDD, store on HDD and send to server)
v. Possible to assign Measurement Menu on Keyboard, which enable to flexible and smooth diagnosis.
w. Compactness gives easy transferability into/out Operation & theater with full of equipment.
x. Wide view angle of monitor to provide high visional recognition in use of Operating Theater, etc. and Back Arm gives easy mobility.
y. Big size Casters give high mobility, which are less affected by materials of floor.
z. The system should have Maintenance reminder to informs users to do maintenance regularly to keep machine good condition.
aa. USB Memory Port as standard. Upgradable to DICOM 3.0 & CD-R
Ab. McAfee Embedded Security Antivirus function on-board as option which does not require to update files.
Ac. Viewing Monitor: 21" or more LCD Monitor with minimum 8 inch LCD touch screen control panel & Built-in cart with 4 transducer connector facilities.
Technical Specifications: Following technical specifications are to be available:
a. Scanning Methods: Following method are to be available:
(1) Electronic convex sector.
(2) Electronic Linear.
(3) Electronic Phased array sector as standard.
b. Examination mode: Following mode are to be available:
(1) B-mode.
(2) M-mode.
(3) D-mode (PW, CW, HPRF-PW).
(4) Flow mode.
(5) Power Flow mode (Directional Power Flow).
(6) eFLOW mode..
(7) Directional eFlow mode
c. Function of Viewing Monitor: 21-inch or more High quality LCD Monitor, IPS-LED provides precise image quality of abdomen and vessel, as well as heart.
Other Technical Specifications: Other technical specification/data are to be available.
a. Probe Frequency Range : 2.0 MHz to 14.0 MHz or more.
b. Frame rate : 740 frames/s or more.
c. Beam former : (1). Transmission : Semi-Compound Pulse Wave Generator. (2). Reception : 12-bit A/D converter (4096 grey levels).
d. Sampling rate : 320 MHz or more.

- k. STC : 8 slide controls or more.
- l. Frame correlation : 16 steps or more.
- m. AGC : 16 steps or more.
- n. Relief : 4 Steps or more.
- p. Smoothing : 16 Steps (1-16) or more.
- q. Sweep speed : 1, 1.5, 2, 3, 4, 6, 8 second/plane or more.
- r. Erase function : Should be available.
- s. FTC : Edge enhancement: ON/OFF.
- t. Image format : BMP (Bitmap), JPEG as standard & DICOM format as option.
- u. Body mark display : 110 kinds or more.
- v. Preset Function : Maximum 35 set of region data & Maximum 30 set of user registered.
- w. Annotation function : Preregistered 400 annotations or more.
- x. Brachytherapy Grid : Grid Display should be available.
- y. Operation panel switch : Mechanical keys with 2-color luminescence.
- z. HDD Capacity : 230 GB or more.

Measurement & Analysis: Measurement and Analysis are following:

a. **Basic Measurements On B-mode image:** Following are to be available:

- (1) Distance (Dist, Dist-Trace).
- (2) Area and Circumference (Trace, Ellipse, Circle).
- (3) Volume (Spheroidal, Prolate, Area-length, BP Simpson, SP Simpson).
- (4) Automatic heart cavity trace is possible. (3-point designation method).
- (5) Index (general purpose), Histogram & Angle & Hip joint angle.

b. **Basic Measurements On M-mode image:** Following are to be available.

- (1) Velocity Length (amplitude).
- (2) Time interval.
- (3) Heart rate.
- (4) Index (general purpose).

c. **Basic Measurements On spectral Doppler:** Following are to be available.

- (1) Velocity.
- (2) Acceleration (or deceleration).
- (3) Mean flow velocity.
- (4) Pressure gradient.
- (5) RI: Resistance index.
- (6) PI: Pulsatility index.
- (7) Pressure half time.
- (8) Heart rate.
- (9) Dop. Caliper measurement.
- (10) Index (general purpose).
- (11) Time interval.
- (12) Stenotic flow measurement.
- (13) Regurgitant flow measurement.
- (14) D Trace.

d. **Abdominal Measurements on B mode:** Following are to be available.

- (1) Gall bladder.
- (2) Common bile duct.
- (3) Liver.
- (4) Pancreas.
- (5) Kidney.
- (6) Spleen.
- (7) SOL (Space Occupying Lesion).
- (8) Vessel diameter (aorta, portal vein).
- (9) Stenotic rate (diameter, area).

e. **Abdominal Measurements on Doppler:** Following are to be available:

- (1) Abdominal aortic flow.
- (2) Renal flow.
- (3) Portal vein flow.
- (4) Shunt flow.
- (5) B/D mode.
- (6) Flow volume.

- (6) Urinary bladder measurements.
- (7) Uterine artery, Ovarian artery measurements.
- g. **Carotid artery Measurements:** Following are to be available
 - (1) % Stenosis area.
 - (2) % Stenosis diameter.
- h. **Obstetrical Measurements:** Following are to be available:
 - (1) Gestational age, Fetal weight.
 - (2) Amniotic index, Amniotic fluid pocket.
 - (3) Supports multiple gestations (twins and triplets).
 - (4) Fetal heart rate, Graph function.
- j. **Urological Measurements:** Following are to be available
 - (1) Prostate PSA volume.
 - (2) Bladder volume.
 - (3) Seminal vesicle.
 - (4) Testicular volume.
 - (5) Renal volume.
 - (6) Cortical thickness &
 - (7) Renal pelvis measurement
- k. **Vascular Measurements on Carotid artery:** Following are to be available.
 - (1) CCA (common carotid artery).
 - (2) ICA (internal carotid artery).
 - (3) ECA (external carotid artery).
 - (4) BIFUR (Bifurcation of carotid artery).
 - (5) VERT (Vertebral artery).
 - (6) % Stenosis area.
 - (7) % Stenosis diameter.
 - (8) IMT (Intima-media thickness).
 - (9) Automated IMT Measurement (Optional).
- l. **Cardiac Measurements On B-mode image:** Following are to be available.
 - (1) Left ventricle function
 - (2) B Pombo.
 - (3) B (Wall) Pombo.
 - (4) B Teicholz.
 - (5) B (Wall) Teicholz.
 - (6) B Gibson.
 - (7) B (Wall) Gibson.
 - (8) Single Plane Ellipse.
 - (9) Biplane Ellipse.
 - (10) Simpson, Modified Simpson Bullet
 - (11) B LAX, B (Wall) LAX, B SAX, B APX
- m. **Cardiac Measurements On M-mode image:** Following are to be available.
 - (1) Left ventricle function.
 - (2) M Pombo.
 - (3) M (Wall) Pombo.
 - (4) M Teicholz.
 - (5) M (Wall) Teicholz.
 - (6) M Gibson, M (Wall) Gibson
 - (7) Mital Valve.
 - (8) Aortic Valve.
 - (9) Tricuspid Valve.
 - (10) Pulmonary Valve.
- n. **Report function:** Following are to be available.
 - (1) Obstetric report.
 - (2) Gynecological report.
 - (3) Urological report.
 - (4) Cardiac function report &
 - (5) Urological report.
- p. **Measurement on VCR:** VCR playback image should be Possible when using (Manual calibration).
- q. **Movement Range of Control Panel & Monitor:** The system must have following features:

160cm or more.
(5) Monitor Swiveling range not less than 340°.
Probe List: Following probe to be supplied/provided with the each Equipment :
a. 4D Convex Probe, Qty-01 No for General Abdomen 4D Image. Frequency Range : 2.0~10.0 MHz or more (Compatible any frequency acceptable).
b. Linear Probe, Qty-01 No for Small Parts & Peripheral Vessels Examination. Frequency Range : 4.0~18.0 MHz (Compatible any frequency acceptable).
c. Vascular Probe: Vascular Probe (Convex Probe) Qty – 01, 3.0- 16.0 MHz

17. **Standard Accessories.** Standard Accessories must include all items and accessories including following which are required for installation and operation the **Portable Ultrasonogram Machine** whether those are mentioned in the specification or not. A list of such items/accessories is to be provided with the quotation indicating item wise price:

- 1x B/W Thermal Printer (Mitsubishi/Sony) with 30 roll printing papers
- 1x Color Inject Printer (Canon/HP/Epson)
- 1x 3KVA On-Line UPS for 15 min operation of complete system
- 1x 2 Ton Air Conditioner.
- Revolving Chair - 01 nos.
- Dehumidifier : Quantity-01 No. Brand, Model, Country of Origin, Manufacture and Year of
- Production : To be mentioned.

18. **Local Training.** The supplier will arrange following training at BNS UPASHAM free of cost:

- Operational Training: 02 x Operator for 02 weeks.
- Repair/Maintenance Training: 02 x EM Tech (01x Navy & 01x Civ) for 02 weeks.

19. **Publication:** Following brochure/catalogue in English language showing detailed particulars of the quoted items should supplied along with the offer.

- Operation manual – 03 copies (1 x Original & 2 x Photocopies).
- Repair/maintenance/service manual including detail circuit/schematic diagram-03 copies (1x Original & 2 Photocopies).
- Parts Catalogue/Master Parts list – 03 copies (1x Original & 2 Photocopies).

20. **Spare Parts.** Adequate number of fast moving spare parts and other recommended spare parts required for 5 years operation are to be quoted indicating item wise price from which buyer will select as per requirement. The supplier should provide guarantee for supplying spare parts for a minimum period of 10 years.

21. **After Sales Service:** The supplier should have requisite after sales service facilities at home to render necessary services as and when required by BN. Necessary agreement will be signed if required. Details of workshop facilities of the supplier should mentioned.

22. **Test, Trial and Acceptance:** The supplier will carry out installation, test and trial of the supplied machine at his own cost. The acceptance of the supplied items will be carried out by BNS UPASHAM, where the supplier's representative will be present. After the satisfactory test/trial, with certificate the acceptance certificate will be given by the Local Acceptance Committee.

23. **Warranty/Guarantee:**

- The supplier must ensure that all items are new and unused. The supplier must provide warranty at least for 02 (two) years from the date of acceptance of the item(s) after satisfactory inspection, test, trial etc as applicable. If any defect/discrepancy of any item arise within the period of warranty, the specific period from the date of notification of the defect/ discrepancy to the supplier upto the date of rectification of defect/resolve of discrepancy will have to be deducted from the warranty period for that particular item(s).
- If any defect/discrepancy arises, within warranty period, then the respective item(s) is/are to be replaced free of cost including freight within 03 (three) months from the date of notification of

25. Validity of Offer: Up to 30 June 2023.

26. Certificate/Document of Authentication: The local supplier must provide following original certificate(s)/document(s) with the offer/quotation to ascertain the genuinity of source and item(s) in order to establish chain of links from the original source of supply items:

- One certificate/document by the manufacture in favour of the supplier (in case of manufacture as direct source (Original).
- FDA/CE Certificate /JIS must be submitted.
- Manufacture Authorization Certification for the specific tender (Original).
- Trained Bio Medical Engineer list with update CV.

27. Users List: User List in Bangladesh with contract details along with user's certificate of the quoted machine is to be provided along with the offer.

28. Terms of Payment: 100% payment will be made after satisfactory test, trial & acceptance by BN in local currency.

29. Condition for Acceptance of Quotation: Quotation has to have supporting documents (booklets, leaflet, catalogue, brochure etc) having detailed particulars of the offered **Portable Ultrasonogram Machine**. The quotation will not be accepted If detailed information regarding specifications, maker's books and catalogue about the same model of the machine quoted, list of spare parts and accessories, etc are not provided

30. Compliance statement. A compliance statement fulfilling all requirements of the tender is to be submitted for evaluation of the quotations, Stating mere 'Yes' or 'No' will not suffice and detailed description/ information's as required are to be given. An incompliance statement may attribute to cancellation of the offer. If any clause of this specification does not commensurate with the offered item, the deviation has to be spelt out clearly.

Baleen
A H M HABIBUR RAHMAN
Surg Cdr BN
DDMS (Navy)
Member Secy
Dt.

[Signature]
DNT (Rep)
SAZEB H M MADDER
Lt Commander BN
Staff Officer (Trg-II)
Naval Headquarters
Banani, Dhaka-1213

[Signature]
DNO (Rep)
Member
MOTATER HOSSAIN
Lt Commander BN
Staff Officer (Ops Plan)
Naval Headquarters
Banani, Dhaka-1213

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DNIT (Rep)
ASMAUL ISLAM
Lt BN
SO (IT-SD) (Information & Technology)
Naval Headquarters
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[Signature]
M ABDUL KADER
Captain BN
Director Technical Stores
Naval Headquarters
Banani, Dhaka-1213
Dt. 04-09-22

[Signature]
AHMED RAFI
DMS (Navy)
Surgeon Commandore BN
Naval Headquarters
Banani, Dhaka-1213

[Signature]
DNS
President
MD. ZOHUR UDDIN
Commandore BN
Director of Naval Stores
Naval Headquarters
Banani, Dhaka-1213
09/09/22