

## **Technical Specifications of Portable Veterinary Ultrasound**

- Should be single man usable ultra-portable and light-weight (4-5 kg) dedicated Veterinary Ultrasound Scanner equipment with inbuilt Color Doppler & Pulse Wave Doppler for both non-sedentary and standard applications supplied in an easy to carry and sturdy transport case.
- Should support following applications: General, Abdominal, Gynecology, Obstetrics, Small parts, Superficial, Anesthesia, Musculoskeletal, Embryo Transfer and Artificial Insemination.
- Should have battery backup with minimum working autonomy of 5 hours with system boot up time of less than 30 sec including inbuilt facility to restart without boot-up.
- Should have minimum 8" TFT LCD monitor with VGA Format Display size 640 x 480, Recording area 640 x 480, Adjustable Tilt, Stereo sound via inbuilt and integrated loudspeaker dynamic up to 90 dB, Digital Brightness Adjustment, MI Mechanical Index & TI Thermal Index.
- Should have following Multi-frequency probe with facility to interchange the probe without restarting the scanner to prevent any dynamic image loss -:
  1. Wideband Convex Probe, Central Frequency 3.5 MHz, B Mode Frequencies of 2.5 MHz, 3.5 MHz & 5.0 MHz, Doppler Frequencies of 2.5 MHz, 3.0 MHz & 3.5 MHz, 128 elements, Radius of Curvature 60 mm, Pitch 0.5 mm, Aperture 12 with 60° Angle for applications on Musculoskeletal, Cardiac examination on Equine, Abdominal & Small Parts on Small Animals.
  2. Wideband Micro Convex Probe, Central Frequency 6.5 MHz, B Mode Frequencies of 5.0 MHz, 6.0 MHz, 7.5 MHz, Doppler Frequencies of 5.0 MHz, 6.0 MHz, 7.5 MHz, 128 elements, Radius of Curvature 14 mm, Pitch 0.175 mm, Aperture 4.2 with 90° Angle for applications on Abdominal, Small Parts on Small Animals.
  3. Wideband Micro Convex Probe, Central Frequency 3.5 MHz, B Mode Frequencies of 2.0 MHz, 3.5 MHz, 5 MHz, Doppler Frequencies of 2.5 MHz, 3.0 MHz, 3.5 MHz, 128 elements, Radius of Curvature 20 mm, Pitch 0.28 mm, Aperture 12 with 100° Angle for applications on Abdominal, Small Parts on Small Animals.
  4. Wideband Linear Probe, Central Frequency 7.5 MHz, B Mode Frequencies of 5.0MHz, 7.5 MHz & 10.0 MHz, Doppler Frequencies of 5.0 MHz, 6.0 MHz & 7.5 MHz, 128 elements, Pitch 0.3 mm, Aperture 4, FOV 38 mm, Foot Print 38mm x 4 mm for applications on Equine Tendons Diagnosis & Small Animal Superficial Parts.
  5. Wideband Linear Rectal Probe, Central Frequency 7.5 MHz, Probe Band-Width of 5MHz to 10MHz, B Mode Imaging Frequencies of 5.0 MHz, 7.5 MHz & 10.0 MHz, Doppler Mode Frequencies of 5.0 MHz, 6.0 MHz & 7.5 MHz, 128 elements, FOV 60 mm for applications on Obstetrics, Gynecology Fetal Sexing, Ovarian Diagnosis, Follicle Visualization and Dynamics.
  6. Wideband Ovum Pickup Probe, Central Frequency 6.5 MHz, Probe Band-Width of 3.5MHz to 12MHz, B Mode Imaging Frequencies of 3.5 MHz, 5 MHz, 7.5 MHz, 10 MHz & 12 MHz, Doppler Mode Frequencies of 3.5 MHz, 5 MHz, 6 MHz, 7.5 MHz & 9 MHz, 128 elements, Pitch 0.205mm, Radius of Curvature 10 mm, Aperture 5, Angle 150° for applications on Ovum Pickup.
- Should have Color Doppler, Color Flow Mapping and Pulse Wave Doppler all included as a part of the standard configuration with Color flow mapping having Velocity, Color Invert with on/off feature, Automatic CFM focus, adjustable and selectable region of interest position/size and minimum gain of 0-120. Pulse Wave Doppler should include selectable and adjustable PW gate position, adjustable PW gate size, adjustable frequency and adjustable PW Gain from 0-21, minimum 7 steps steering, 0°-180° angle with 1° step, adjustable baseline, adjustable audio, simplex mode and Automatic measurements in PW mode with user customizable Presets & Protocols.
- Should have following Input and Output options on the scanner device itself: RJ 45, Video Out for external screen and thermal printer, DVI connection and USB port.
- Should have Processing via Digital beam-former, Dual beam computing, 32 true emission channels, 64 reception channels, Multi-zone focusing, Continuous dynamic focusing in receive, 256 shades of gray and Evolutive hardware with FREE firmware upgrade (FPGA) for the total duration of the warranty of the equipment.
- Should have Alphanumeric Keyboard with Ergonomic Key dispatch, Intuitively mode grouped Ergo-Zone keys, Touch-pad, for easy access to operation menus and Audio adjustment.
- Should have following operating modes: B, B+B, B+M & M Mode, adjustable region of interest Zoom and full screen zoom function, 5 user selectable focus points for each focus, biopsy guide, Cine loop, Text & Annotations, Protocols, automatic and manual Measurement and Tables on both dynamic and already stored images and clips, Storing facility for Clips and Images with facility to transfer to PC/Laptop and DICOM feature.
- Should have settings for Veterinary Hospital &/OR Department &/OR clinic name, user name, date, time, body marks, image storage in at least .jpeg & .bmp file formats, video clip storing format, easy system software upgrade, individual user protocols, user annotations, free user text, pre-stored user annotations, export feature for images, clips, reports, patient files to USB, review of images, clips, reports, patient files from USB, archiving of patient files and reports on USB,.
- Should comply to CE Marked to Council Directive, 93/42/EEC on Medical Devices, EN 60601-1 Electrical medical equipment, EN 60601-1-1 Electrical medical equipment, EN 60601-1-2 Electromagnetic compatibility, EN 60601-1-4 Programmable medical systems, EN 60601-2-37 Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment, IEC 61157 Declaration of acoustic output & ISO 10993 Biological evaluation of medical devices.
- Should have full post sale service back-up, in India and onsite with free of charge facility to train the user on equipment's working and use at the time of installation.