

Please refer following GeM Bid:

Bid Number: GEM/2021/B/1465096 dated 25.8.2021

Last date of Bid: 15.9.2021

Items to be procured

ITEM No. 1

TECHNICAL SPECIFICATIONS FOR VITAL SIGN SIMULATOR

Vital sign parameters	ECG, SpO2, Respiration, NIBP, IBP, Temperature, Cardiac Output (CO). All above testing parameters should be inbuilt in a single unit. Multiple modules for testing not acceptable.
Communication	USB/Wireless IEEE 82.15.4 for control by a computer
Memory	Built-in required to store the recorded details
ECG	10 to 360 BPM in step of 1 BPM step With accuracy $\pm 1\%$ of setting
ECG lead connection	Button type
NIBP	Pressure units mmHg or kPa NIBP simulations Pulse 2 mmHg max into 500 ml NIBP system Volume of air moved 1.25 ml max Simulations (systolic/diastolic [MAP]) Adult: 60/30 (40), 80/50 (60); 100/65 (77); 120/80 (93); 150/100 (117); and 200/150 (167) and 255/195 (215) Neonatal: 35/15 (22); 60/30 (40); 80/50 (60); 100/65 (77); 120/80 (93) and 150/100 Pressure variability: systolic and diastolic pressures are variable by 1 mmHg
NIBP Test	Leak Test :Target pressure 20 mmHg to 400 mmHg Elapse time 0:30 min to 5:00 minutes: seconds in 30 second steps Leakage rate 0 mmHg/minute to 200 mmHg/ minute Manometer (pressure meter) Range10-4000mmHg Resolution 0.1 mmHg Accuracy $\pm (0.5\% \text{ reading} + 0.5 \text{ mmHg})$ Pressure Source test : Target pressure range 20 mmHg to 400 mmHg Resolution 1 mmHg Pressure relief test (100-400 mmHg)

Arrhythmias	<p>Baseline NSR 80 BPM</p> <p>PVC focus Left focus, standard timing (except where specified)</p> <p>Supraventricular arrhythmia Atrial fibrillation (coarse or fine); atrial flutter; sinus arrhythmia; missed beat (one time); atrial tachycardia; paroxysmal atrial tachycardia; nodal rhythm; and supraventricular tachycardia</p> <p>Premature arrhythmia Premature atrial contraction (PAC); premature nodal contraction (PNC); PVC1 left ventricular; PVC1 left ventricular, early; PVC1 left ventricular, R on T; PVC2 right ventricular; PVC2 right ventricular, early; PVC2 right ventricular, R on T; and multifocal PVCs</p> <p>Ventricular arrhythmia PVCs 6, 12, or 24 per minute; frequent multifocal PVCs; bigeminy; trigeminy; multiple PVCs (one-time run of 2, 5, or 11 PVCs); mono-ventricular tachycardia (120 to 300 BPM in 5 BPM steps); poly-ventricular tachycardia (5 types); ventricular fibrillation (coarse or fine); and asystole</p> <p>Conduction defect First-, second-, or third-degree heart block; and right- or left-bundlebranch block</p>
Respiration	<p>Rate 10 to 150 BPM in 1 BrPM steps</p> <p>Waves: Normal or ventilated</p> <p>Accuracy $\Delta \pm (5 \% \text{ of setting} + 0.1 \Omega)$</p> <p>Accuracy baseline $\pm 5 \%$</p>
IBP	<p>Static pressure -10 to 300 mmHg in step of 1 mmHg</p> <p>Pressure accuracy $\pm (1 \% \text{ of setting} + 1 \text{ mmHg})$ accuracy guaranteed for dc excitation only</p> <p>Channels 2, each independently settable with identical parameters and are individually electrically isolated from all other signals</p> <p>Exciter input range 2 to 16 V peak</p> <p>Types (default pressures Arterial (120/80) Radial artery (120/80) Left ventricle (120/00) Right ventricle (25/00) Pulmonary artery (25/10) Pulmonary-artery wedge (10/2) Right atrium (central venous or CVP) (15/10) Pressure variability</p> <p>Systolic and diastolic pressures are independently variable in 1 mmHg steps</p>
SpO2	30 % to 100 % , Test module
Accessories	Cables for IBP and other standard accessories to be supplied
Display	LCD display for clear visibility & Clarity
Battery operated	Should be operated with inbuilt rechargeable battery
Auto sequence testing	To program the test sequences in the device without Software Monitor testing sequence Medical training sequence Oximeter testing

	<p>sequence Cardiac failure sequence Arrhythmia sequence Exercise sequence Respiration sequence Performance wave test IBP testing sequence Temperature sequence</p>
Accessories and Standards	<p>Equipment should be supplied with all required accessories and should comply IEC/EN 61010-1 3rd Edition; Pollution degree 2 CAT None standards for safety and IEC 61326-1:2006 for electromagnetic compatibility</p>
After Sales support	<p>OEM should have preferably direct operations in India for prompt support.</p>

ITEM No. 2**TECHNICAL SPECIFICATIONS FOR MEDICAL SCOPE**

Type of input channels	Analog
No of analog channel	2
Record Length Per Analog Channel Simultaneously	10000
Sampling Rate Per Analog Channel Simultaneously	2.5 GS/sec
Digital Channels	No
No of digital channels	NA
Record Length Per Digital Channel Simultaneously	NA
Sampling Rate Per Digital Channel Simultaneously	NA
Bandwidth	200MHz
Bandwidth Upgradability	No
Display Type	Colour LCD
Minimum display size	6in
Time Base Accuracy	100ppm
Product Specification	
Vertical Sensitivity	2 mV/div to 100 V/div
Vertical Resolution	8 Bit
Frequency analysis feature	Yes
Time Base Range	2 ns/div to 4 s/div
Minimum detectable Pulse Width	8 ns
Memory Upgradability	No

Segmented Meamory Feature Available	No
Waveform Update Rate (Waveform/sec)	NA
Coupling	AC,DC, GND
Trigger Types	Edge, Pulse width, video, runt, setup/hold, pattern /state
Measurements	Math Function(Add, Sub,Multiply, Div), Automatic Measurement of Time and amplitude, FFT,Low Pass Filter, Frequency Domain Function, Time and voltage cursors, FFT magnitude
Acquisition Modes	Peak Detect, averaging, hi-res, Roll Mode, Sample, Envelope
I/O Interface	USB, LAN, Software for waveform analysis
Power Source	Battery operated
Any other features, if applicable	Autorange, Trend Plot and replay of 100 screens,
Standard Accessories to be supplied	Yes
Additional Specifications	<p>Automatic capture and REPLAY of 100 screens</p> <p>Advanced automatic triggering that recognizes signal patterns, automatically sets up and continuously adjusts triggering, time base and amplitude. Automatically displays stable waveforms of complex and dynamic signals like motor drive and control signals. Can be switched off if preferred.</p> <p>Multiple channel electronic paperless recorder. Graphically plots, displays and stores results of up to four automatic scope measurements or a DMM-reading over time, record time span should be atleast 20 days with a minimum resolution of 100 seconds</p> <p>Should have the capability of Waveform compare and pass/fail testing</p> <p>Should have IP51 Rating</p> <p>Should have Automatic , free run, single shot, edge, delay, dual slope, video, video line, selectable pulsewidth (channel A only), N-cycle trigger modes</p> <p>Weight should be less than 2.3 Kg</p> <p>should have 2400 mAh battery with upto 7 Hrs battery backup</p> <p>Should have power saving options like automatic power down, auto Display off with adjustable power down time</p> <p>Should comply below safety standards</p> <p>EN61010-1-2001, Pollution Degree 2; CAN/CSA C22.2, No. 61010-1-04,</p>

with approval; UL61010B; ANSI/ISA-82.02.01

Should have CAT III 1000 V/CAT IV 600 V safety rated instrument for industrial environments

Should have Isolated USB host port for direct data storage to a USB memory device and USB device port for easy PC communication

Roll mode should give 30,000 points per input channel for low frequency signal analysis

Medical Accessory Kit (includes 50 ohm BNC feed-through, 50 ohm 10:1

attenuator feed through, 1 ohm current shunt, 50 ohm current shunt, 50 ohm coax cable, female BNC to 4 mm banana adapter, two female to female 4 mm banana plug adapters