

...for the purpose of the test and the results of the test shall be reported to the ...

Sr. No.	Description	Model	Qty.
01	Electrodynamic Vibration Test System with Slip Table (Monobase Configuration) (Detail specifications are attached at Annexure-A.)	M2232A SENTEK Dynamics or Equivalent	01 Set

The ... of the ... shall be ...

**Electrodynamic Vibration Test System with slip table (Monobase Configuration)**

Sr. No	Specifications	Qty
1	<b>A) Vibration Shaker</b> <ul style="list-style-type: none"><li>• Armature Load Capability: 300 kg</li><li>• Armature Diameter: 320 mm</li><li>• Acceleration: 100 g (for sine and random) &amp; 200 g ( for shock)</li><li>• Velocity: 2 m/s</li><li>• Displacement (p-p): 51 mm</li><li>• Usable Frequency range: DC-3000 Hz</li><li>• Armature Insert Size: ISO M10 or M12</li><li>• Grid pattern: 8 on <math>\phi 120</math>, 8 on <math>\phi 250</math></li><li>• Stray Magnetic Field &lt; 10 gauss</li><li>• Automatic Static and Dynamic Armature Centering (AAC)</li><li>• Air Isolation Pads/bags (for mounting to standard concrete ground floor)</li><li>• Flexible Duct fittings for vibration generator to accommodate both orientations</li></ul>	01
2	<b>B) Power Amplifier</b> <p>A compatible power amplifier is required to meet the power requirements of the system &amp; should be equipped with safety interlocks such as over voltage, over current, under voltage, over temperature, over travel, phase failure etc.</p> <ul style="list-style-type: none"><li>• Power Range: Should be sufficient for the full power of the vibrator</li><li>• System input power: 3-Phase, 380V/50Hz</li><li>• Signal to noise ratio &gt; 65 dB</li><li>• Amplifier Efficiency &gt; 90%</li><li>• Length of interconnecting cables: 60 feet</li></ul>	01
3	<b>C) Slip Table:</b> <p>V- Groove bearings guided slip-table (with drive bar) for trunnion mounted vibrator (with all standard accessories) is required. Inserts pattern on slip table should be similar to the armature with additional inserts on sides and corners.</p> <ul style="list-style-type: none"><li>• Configuration: Monobase</li><li>• Table Size: 800x800 mm</li><li>• Material: Magnesium</li><li>• Grid plus armature insert pattern: 100 mm grid</li><li>• Self-contained oil reservoir and filter</li><li>• Integral Hydraulic pump</li><li>• Oil guard protection</li><li>• Air bags for use on standard concrete floor</li></ul>	01
4	<b>D) Square Head Expander:</b> <ul style="list-style-type: none"><li>• Size: 600x600 mm (Top)</li><li>• Diameter (Bottom): 320 mm (armature size)</li><li>• Material: Magnesium Alloy</li></ul>	01
5	<b>E) Cooling:</b> <ul style="list-style-type: none"><li>• Cooling Method: Air Cooled</li><li>• Blower unit is required with sufficient air flow and pressure for proper cooling of system enclosed in noise reduction chamber</li></ul>	01

6	<p><b>F) Digital Vibration Controller and Accessories:</b></p> <p>All in one 24 bit digital 8 channel vibration controller is required. Option of self-calibration is also required. Details are given below:</p> <p><b>Hardware:</b></p> <ul style="list-style-type: none"> <li>• No of input channels: 08 analogue channels</li> <li>• ADC: 24 bit Resolution</li> <li>• Input Voltage Range <math>\geq \pm 10V</math></li> <li>• No of Output channels: 02</li> <li>• DAC: 24 bit Resolution</li> <li>• Output Voltage Range <math>\geq \pm 10V</math></li> <li>• PC Connectivity: Through Ethernet Cable</li> <li>• 1 Gb internal flash memory to store</li> </ul>	01
	<p><b>Controller Software Modules:</b></p> <p>Controller software with test signals generation ability for all following modules is required:</p> <ul style="list-style-type: none"> <li>• Random</li> <li>• Swept Sine</li> <li>• Classical Shock</li> <li>• Random on Random</li> <li>• Sine on Random</li> <li>• Resonance Search, Track and Dwell (RSTD)</li> <li>• Shock Response Spectrum (SRS)</li> <li>• Field Data Replication</li> <li>• Transient Time History (TTH)</li> <li>• Time waveform replication</li> <li>• Recalibration software with valid license for the controller</li> <li>• Operating system: MS Windows 7 or latest with report generating in MS Office</li> <li>• All the software modules on DVD (original)</li> </ul>	
7	<p><b>G) Data Recorder and Analysis:</b></p> <ul style="list-style-type: none"> <li>• Real-time Data Recorder</li> <li>• Playback Analysis</li> </ul>	01
8	<p><b>H) Vibration Sensors and Cables:</b></p> <ul style="list-style-type: none"> <li>• <b>Accelerometers (along with all accessories):</b></li> <li>• Voltage Sensitivity: 10 mV/g</li> <li>• Acceleration Range: 500 g</li> <li>• 10-32 side connector</li> <li>• Complete Accessories such as pre-amplifier</li> </ul>	08
	<ul style="list-style-type: none"> <li>• <b>Vibration Sensors Cable ( for accelerometers):</b></li> <li>• General purpose super-low noise Teflon cable is required</li> <li>• Connector Type: 10-32 plug to BNC plug</li> <li>• Length: 40 m</li> </ul>	08
	<ul style="list-style-type: none"> <li>• <b>Charge Accelerometer</b></li> <li>• Charge sensitivity: 1 pC/mS<sup>-2</sup></li> </ul>	08

	<ul style="list-style-type: none"> <li>Frequency Range: 0.1 - 12600 Hz</li> <li><b>Cable (for charge accelerometer):</b></li> <li>General purpose super-low noise Teflon cable is required</li> <li>Connector Type: 10-32 plug to BNC plug</li> <li>Length: 40 m</li> </ul>	08
9	<b>J) Spare Parts and Tools</b> <ul style="list-style-type: none"> <li>Armature for shaker</li> <li>Torque Rubber</li> <li>Upper Guidance Support</li> <li>Lower Guidance base</li> <li>Roller bearing assemblies</li> <li>Payload support air bag</li> <li>Thermal Sensor</li> <li>Dust Seal</li> <li>Slip Table Damping Pole Bushing</li> <li>Control Module</li> <li>Thermal Module</li> <li>Contactors</li> <li>Gain switch</li> </ul>	01 set each
	<ul style="list-style-type: none"> <li>Slip Table Damping Pole</li> </ul>	02 sets
	<ul style="list-style-type: none"> <li>Sub Module</li> </ul>	01 piece
	<ul style="list-style-type: none"> <li>MOSFET</li> </ul>	01 set
Quote each item's price separately for all the items mentioned in section 9 i.e. "spare parts and tools"		
10	<b>K) Documentation and Manuals:</b> <ul style="list-style-type: none"> <li>All applicable standards</li> <li>User's manuals of all the equipments</li> <li>Maintenance manuals of all the equipment</li> <li>Schematic and circuit diagrams</li> <li>Calibration certificates for the equipments where applicable</li> <li>Acceleration to load performance tables for sine, random and shock operation of system</li> <li>System performance curves over full frequency range</li> <li>Software on DVDs</li> <li>Warranty certificates</li> </ul>	01 set each
11	<b>L) Inspection/Training:</b> <ul style="list-style-type: none"> <li>Pre-shipment Inspection of all the equipment at vendor site</li> <li>Operational training of all the equipment at vendor site of two engineers for 02 weeks</li> <li>Installation and commissioning support by vendor at client site</li> </ul>	

**Model: M2232A by SENTEK Dynamics or Equivalent**

**Note:** Quote each item's price separately, where applicable. Clearly specify make, model numbers, origin, above mentioned parameters and provide detailed literature in support. Failure to compliance may cause the rejection of the offer.