



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008 (ODISHA)**

An Institute of National Importance under Ministry of Education, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW/MN/2021/228 Dated: 25/01/2021

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **Human Vibration Meter and Analyzer with compatible attachments** at NIT Rourkela.

Last date of Submission of Bid : **15/02/2021 by 03:00 PM**

Opening date of techno-commercial Bid : **17/02/2021 at 03:00 PM**

For Details: http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx

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Bidding through: <https://eprocure.gov.in/eprocure/app>

**Sd/-
REGISTRAR**



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008, ODISHA**

OPEN TENDER NOTICE NO.: NITR/PW/MN/2021/228

Dated: 25/01/2021

Procurement of Human Vibration Meter and Analyzer with compatible attachments

SL.NO	Description of Goods/Service	Quantity
1.	Human Vibration Meter and Analyzer with following compatible attachments: a) Whole-Body Tri-axial Seat Pad Accelerometer, b) Hand Arm Vibration Accelerometer, c) Seat transmissibility Acceleromete	1 unit

1. Quantity required : As mentioned above (All information regarding technical specification provided in Annexure-II)
2. Delivery : Within **90 days** from the date of purchase order
3. Last Date of submission of Bid : **15/02/2021 by 03:00 PM**
4. Date of opening of techno-commercial bid : **17/02/2021 at 03:00 PM**
5. The firm should not have been black listed at any time.
6. The submission of following bids by the tenderer should be through <https://eprocure.gov.in/eprocure/app>. Please follow the guidelines as per the portal.

Human Vibration Meter and Analyzer with following compatible attachments:

- a) Whole-Body Tri-axial Seat Pad Accelerometer,
- b) Hand Arm Vibration Accelerometer,
- c) Seat transmissibility Accelerometer

(Open Tender Notice No.: NITR/PW/MN/2021/228

Dated: 25/01/2021)

Due on 17/02/2021 by 03:00 PM

7. **Liquidated damage clause** will be charged for any delay in supply of goods.
8. The validity of the tender shall be **90 days** from the date of opening of the techno-commercial bids.
9. Detailed advertisement including all tender documents is also available in our website at http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx .
10. NIT reserves the right to qualify or deny prequalification of any or all applicants without assigning any reasons.

(REGISTRAR)

**NIT, Rourkela
Fax No- 0661-2462022
Ph. No -0661-2462021**

DETAILED TECHNICAL SPECIFICATION

Technical Specifications for purchasing “Human Vibration Meter and Analyzer” with following compatible attachments:

- a) **Whole-Body Tri-axial Seat Pad Accelerometer,**
- b) **Hand Arm Vibration Accelerometer,**
- c) **Seat transmissibility Accelerometer**

Sealed tender bids are invited from reputed/authorized vendors/companies for “**Human Vibration Meter and Analyzer** “with following tender specifications.

Sl. No.	Details Technical Specifications
1. Human Vibration Meter and Analyser	
1	Human Vibration Meter meeting ISO 8041:2005, ISO 2631-1,2&5, ISO 5349, EU Directive 2002/44/EC
2	Input No of channels: more than 3 channels
3	Filters: Wd, Wk, Wm, Wb, Wc, Wj, Wg, We, Wf , Wh and additionally HP
4	Results: RMS, VDV, MTVV or Max, Peak, Peak-Peak, Vector, A(8), Dose, ELV, EAV
5	Sampling Rate: 6KHz
6	Resolution: 0.1dB
7	Dynamic Range: Minimum 0.2dB
8	OLED Colour display to measurement instrument
9	Operating Temperature Range : -10 °C to 50 °C
10	Whole body vibration measurement
11	time-domain signal recording (meeting ISO 2631-5)
12	1/1 and 1/3 octave real-time analysis
13	Advanced data logger including spectral analysis
14	Micro SD flash card for mass data storage
15	Integration time programmable up to 24 h
16	Software for easy instrument setup and data download
17	Weight not more than 500gms with batteries
18	Measurement Range: Transducer dependent: 0.01 ms ⁻² RMS to 50 ms ⁻² Peak (with Wd filter); 0.1 ms ⁻² RMS to 500 ms ⁻² Peak (with Wh filter)
19	Frequency Range 0.1 Hz to 2 kHz (transducer dependent)
20	Force Range 0.2 N to more than 150 N (dedicated channels for force transducers)
21	Sampling Rate: 6 kHz
22	Interfaces USB 1.1 Client, Extended I/O - AC output (1 V Peak) or Digital Input/output (Trigger - Pulse)
23	Power Supply : Four AA batteries (alkaline) operation time > 12 h (6.0 V / 1.6 Ah) or Four AA rechargeable batteries operation time > 16 h (4.8 V / 2.6 Ah) USB interface 500 mA HUB

Technical Specifications for attachments mentioned above:

a. Whole-Body Tri axial Seat Pad Accelerometer	
1	Number of axis: 3 (MEMS based)
2	Sensitivity: (± 5 %), 50 mV/ms- 2 at 15.195 Hz
3	Measurement range: 0.01 ms ⁻² RMS to 50 ms ⁻² PEAK
4	Frequency response: 0 Hz to 100 Hz Resonant frequency: 5.5 kHz (MEMS transducer) TEDS Supported
5	Electrical noise: < 0.005 ms ⁻² RMS, HP1 filtering
6	Temperature Range: from -10°C to +50°C Temperature Coefficient <+/-0.01 %/°C Humidity up to 90 % RH, non-condensed
7	Maximum vibration:100 000 ms ⁻² shock survival
8	Integrated cable: 1.4 meters

9	Seat Pad accelerometer tightening strap
10	Electrical: Supply Current < 5.0 mA Supply Voltage 5.2 V ÷ 16 V Bias Voltage 2.5 V ± 0.05 V Output Impedance >50 Ohms Charge / Discharge Time Constant (start-up time) 30 sec. typical.

Sr. No.	Required Parameter
b. Hand Arm Vibration Accelerometer :	
1	Quantity : 1
2	Number of axis: 3 (MEMS based)
3	Sensitivity (± 5 %):0.661 mV/ms ⁻² at 79.58 Hz
4	Measurement range: 1500 ms ⁻² PEAK
5	Frequency Response: 0 Hz to 1000 Hz
6	Resonant frequency: 16.5 kHz (MEMS transducer)TEDS Supported
7	Electrical noise: < 0,14 ms ⁻² RMS, Wh weighting
8	Temperature Range: from -10°C to +50°C
9	Temperature Coefficient <+/-0.02 %/°C
10	Humidity up to 90 % RH, non-condensed
11	Maximum vibration:100 000 ms ⁻² shock survival
12	Integrated cable: more than 1 meters
13	Hand arm accelerometer mounting adopter
14	Electrical:
15	Supply Current < 5.0 mA
16	Supply Voltage 3.3 V to 5.5 V
17	Bias Voltage 1.5 V ± 0.05 V
18	Output Impedance >50Ohms
19	Charge / Discharge Time Constant (start-up time) 30 sec. typ.
c. SEAT transmissibility Accelerometer	
1	Quantity: 1
2	Number of axis 3
3	Sensitivity (± 5 %) 5.81 mV/ms ⁻² at 15.915 Hz
4	Measurement range 160 ms ⁻² PEAK.
5	Frequency response 0 Hz to 500 Hz
6	Resonant frequency 5.5 kHz (MEMS transducer)TEDS supported
7	Electrical noise < 0,066 ms ⁻² RMS, BL Wb weighting
8	Maximum vibration 100 000 ms ⁻² shock survival for MEMS
9	Temperature from -10°C to +50°C
10	Temperature Coefficient <+/-0.01 %/°C
11	Humidity up to 90 % RH, non-condensed
12	Integrated cable: 1.4 meters
13	Electrical:
14	Supply Current < 5.0 mA
15	Supply Voltage 3.3 V to 5.5 V
16	Bias Voltage 1.5 V ± 0.05 V
17	Output Impedance >50Ohms
18	Charge / Discharge Time Constant (start-up time) 30 sec. typ
d. Carrying Case	

Other Requirements	
Demonstration of instrument performance.	The supplier should demonstrate the working of the equipment by detecting all specified vibration parameters of interest at the time of installation of the equipment. The acceptance would be subject to meeting the required criterion.
Manuals	1 set of detailed operation, servicing and Programming manual should be provided in both soft form as well as Hard copy. Language should be English only.
Training	Supplier should provide a comprehensive and free training to NIT Rourkela engineers for at least 3 working days on operation and preventive maintenance of the equipment and attachments.
Warranty	01 Year Standard Warranty (Front line service to be done at customer place & if any cards/modules are to be replaced can be taken to service center & back to bench service charges to be borne by Bidder). The Original End Manufacturer (OEM) should have Calibration and other maintenance support facility located in India.

Guarantee / Warranty and after sales technical support
The tender must be quoted with one year on-site comprehensive Warranty/Guarantee commencing from the date of complete and satisfactory installation of the equipment against the defect of any manufacturing, workmanship and poor quality of the components. The bidder also must agree and issue a certificate stating that technical query will be responded within 7 working days and the support will be provided within 21 working days from the date of reporting of the technical failure for down time free operation of the instrument.
Operation and service manual in English (electronic and hard copy) should be provided with all the equipment and components.
In the technical details, specify clearly about the kind of service/maintenance required for the system. Also mention that whether the service has to be carried out by a company engineer or it can be carried by trained service personnel within India.
The complete training of all measurement options should be free for NIT Rourkela user staff/students' members, onsite.
Enclose pre-installation guide for the details on electrical power, space and other for all components and essential accessories.