

ANNEXURE- 1

TECHNICAL SPECIFICATIONS OF 16 CHANNEL NOISE & VIBRATION DATA ACQUISITION SYSTEM

DATA ACQUISITION SYSTEM HARDWARE

- No of Channels: 16 or more (Expandable in future)
- Inputs: Voltage, IEPE, current
- Sampling Rate: Simultaneous upto 200kS/sec
- Voltage Ranges: $\pm 500\text{mV}$ to $\pm 10\text{V}$
- Input Accuracy: $\pm 0.1\%$ of reading
- Dynamic Range: $> 120\text{ dB}$
- Overvoltage Protection
- Input connector: BNC
- IEPE Sensor Check on or near connector for all inputs required
- Operating Temperature: -5 to $50\text{ }^{\circ}\text{C}$
- Storage Temperature: -20 to $60\text{ }^{\circ}\text{C}$
- Battery Pack: Li-ion 96Wh with charger or higher
- Instrument protection class: IP65 or higher

General Purpose Single Axis Accelerometers

- Sensitivity: 100mV/g or more
- Frequency: $1\text{Hz} - 10\text{kHz}$
- Range: $\pm 50\text{ g}$ or more
- Cable: 20ft or more without attenuation

General Purpose Tri-axial Accelerometers

- Sensitivity: 100mV/g or more
- Frequency: $1\text{Hz} - 10\text{kHz}$
- Range: $\pm 50\text{ g}$ or more
- Cable: 20ft or more without attenuation

Microphone

- Nominal Microphone Diameter: $1/2"$
- Frequency Response Characteristic: Free-Field
- Sensitivity: 50mV/Pa or better
- Frequency Range: 3.75 to 20000 Hz or better
- Dynamic Range: $137\text{ dB re } 20\text{ }\mu\text{Pa}$
- Cable: 20ft or more without attenuation

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Dr. Nripen Chanda

Dr. Himadri Roy

Mr. Amit Kumar

Dr. Swarup Kumar Laha
(I/O)

Dr. Kalyan Kumar Mistry

Dr. Partha Sarathi Banerjee
(Chair Person)

SOFTWARE CAPABILITIES

MAIN FEATURES

- Time domain Recorder:(Simultaneous 16 channel, real time auto scaling)
- Frequency domain: FFT spectrum (adjustable line resolution up to atleast 64k, Rectangular/Hanning/Hamming/Flat top/Triangle/Blackman/Exponent down windowing, lin/log/dB/reference etc.)
- Acoustic: A-weighting axis scaling, Amplitude/RMS/Power/PSD/RMS SD amplitude display
- STFT
- 3D FFT Waterfall
- Octave: CPB plot (1/1, 1/3, 1/6, 1/12, 1/24 type; ANSI-IEC-true-octave/synthesized, Lin/A/B/C/D weighting, Lin/Exp/Pkavg with overlap)
- XY recorder (Lissajous), 2D graph, Orbit graph, Bode plot
- Structural Analysis: Modal Test, Impact Hammer and Shaker Test, FRF MISO and SIMO, Coherence, Phase and Amplitude
- Human vibration acc. to ISO 5349, ISO 8041, ISO 2631.
- Export option to MS EXCEL, CSV File etc.

FILTERING

- IIR: Low pass/high pass/band pass/band stop, 1 to 10th order, Butterworth/Chebychev/Bessel/custom coefficients
- FIR: Low pass/high pass/band pass/band stop/all pass, selectable number of taps/order, Blackman/Rectangle/Hamming/Hanning/Kaiser/Flat top, Impulse and step response
- Frequency domain filter: Low pass/high pass/band pass/band stop etc.

STATISTICS

- Types: RMS, Average, Median, Peak, Peak-Peak, Crest factor, Sum, Min, Variance, COV, Standard deviation etc.

TIME DOMAIN ANALYSIS

- Integration/derivation: single/double with adjustable filter, automatic unit conversion (e.g. acceleration to velocity to displacement), jerk (derivation of acceleration)

LICENSE TYPE: Perpetual

Warranty: 1 year comprehensive on the whole system

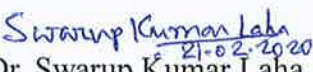
Training: 5 days


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