

Letter no. : IIT/SG/PresSG/OAT/6.09.2013

To

M/S: \_\_\_\_\_

6 September 2013

Sealed Quotation is invited for the following items

Item	Quantity	Specifications
Front Speakers	3	<p>System type : 3 Way full range –Point Source Frequency Response : 115 Hz – 23kHz, Frequency Range (-10dB) : 90Hz - 27kHz</p> <p><b>Driver Complement</b> LF : 2 x 300mm (12.00”) Low Frequency Transducers, Semi Horn Loaded , MF/HF : Dual Concentric Compression driver loaded into a single PSW Waveguide, Crossover Frequency : 450Hz (DSP Generated) 7kHz (passive), Directivity Factor (Q) : 21.2 averaged 1kHz to 10kHz, Directivity Index (DI) : 13.3 averaged 1kHz to 10kHz</p> <p><b>Rated Maximum SPL 2</b> LF : 134dB (average) 140dB (peak), MF/HF : 138dB (average) 144dB (peak)</p> <p>Construction Finish :Textured black or white paint Powder coated perforated steel grille</p> <p><b>Electronics</b> Efficiency: &gt;85% typically, Damping Factor : 120 ref 8 Ohms, Distortion : &lt;0.05% @ 1kHz -3dB output (22kHz bandwidth), Input Impedance : 5.6kOhms unbalanced, 11.2kOhms balanced, Output Power (Programme) : LF - 800W MF/HF - 800W (limited to 400W), Input Sensitivity : 1.4V ( 5.5dBu), System Type : Dual channel Class D</p> <p><b>DSP System</b> Comms Facilities : Firmware updatable and selected parameters editable, Communications : Serial - RS485 Proprietary message format, Dynamic Range : 112dB(A) typical, DSP : 3rd generation SHARC, Sampling Frequency : 96kHz 24 bit A/D-D/A word length, Format : 1 IN - 2 OUT</p> <p><b>PSU Specifications</b> Input Connector : Locking Neutrik Powercon, Voltage Selection : Automatic (115 / 230V, 45 - 65Hz) , Type : High current, high frequency switch mode, Efficiency &gt; 90%, Input voltage : 100v / 115v / 230v nominal /-10%</p>

Surround Speakers	12	<p>Frequency Response (-3 dB) : 70 Hz – 25 kHz , Frequency Range (-10 dB) : 55 Hz – 38 kHz  System Sensitivity (1 W at 1 m) : 97 dB (1 W = 2.83 V for 8 ohms),  Dispersion (degrees conical) : 90 degrees conical</p> <p><b>Driver Complement</b> : 1 x 203 mm (8.00") constant directivity Dual Concentric, Crossover : Passive 1 kHz with HF protection</p> <p>Directivity Factor : 9.6 (averaged 1 kHz to 8 kHz), Directivity Index : 9.8 (averaged 1 kHz to 8kHz),</p> <p><b>Rated Maximum SPL</b>  Average: 120 dB Peak: 126 dB, Power Handling : Average: 200 W, Programme: 400 W, Peak: 800 W, Nominal Impedance : 8 ohms</p> <p><b>Construction Finish</b> : Textured black or white paint, with, Powder coated perforated steel grille</p> <p><b>Distortion</b>  (10% Full Power) : 2<sup>nd</sup> Harmonic 250 Hz = 0.52%, 1kHz = 2.98%, 10 kHz = 3.58%, 3<sup>rd</sup> Harmonic 250Hz = 0.58%, 1kHz = 0.63%, 10kHz = 0.19%  (1% Full Power) : 2<sup>nd</sup> Harmonic 250Hz = 0.10%, 1kHz = 0.81%, 10kHz = 1.18%, 3<sup>rd</sup> Harmonic 250Hz = 0.26%, 1kHz = 0.58%, 10kHz = 0.03%</p>
Subwoofer	2	<p>Frequency Response (+/-3dB) : 31Hz - 600Hz, Frequency Range (-10dB) : 24Hz - 1.5kHz, Rated Maximum SPL : Average = 137dB Peak = 143dB</p> <p><b>Driver Complement</b> : 2 x 458mm (18") Bass driver, Crossover(DSP Generated) : Variable low pass filter</p> <p><b>Distortion</b>  10% Full Power : 2<sup>nd</sup> Harmonic 40 Hz = 0.26%, 100Hz = 0.29%, 3<sup>rd</sup> Harmonic 40Hz = 0.92%, 100Hz = 0.27%  1% Full Power : 2<sup>nd</sup> Harmonic 40 Hz = 0.13%, 100Hz = 0.16%, 3<sup>rd</sup> Harmonic 40Hz = 0.23%, 100Hz = 0.19%</p> <p><b>Construction Finish</b> : Textured black or white paint, Powder coated steel grille</p> <p><b>Electronics</b>  Efficiency : &gt; 85% , Damping Factor : 120 ref 8 ohms, Distortion : &lt;0.05% @ 1kHz -3dB output (22kHz bandwidth)</p>

Amplifier	1	<p>Input Impedance: 5.6k Ohms unbalanced, 11.2k Ohms balanced, Output Power (Programme) : 2500W, Input Sensitivity : 1.4V (+5.5dBu), System Type, Dual channel Class D (Bridged)</p> <p><b>DSP System</b> Dynamic Range : 112dB, DSP : 3rd generation SHARC, Sampling Frequency : 96kHz 24 bit A/D-D/A word length, Format : 1 IN - 1 OUT</p> <p><b>PSU Specifications</b> Voltage Selection : Automatic (115 / 230V, 45 - 65Hz), Type : High current, high freq. switch-mode, Efficiency : &gt;90%, Input voltage : 100v / 115v / 230v nominal +/-10%</p> <p><b>Channel Specifications</b> Number of channels : 8, Peak total output all channels driven : 1000 W, Peak output voltage per channel : 100 V / 70 Vrms Max. Output current per channel: 5.6 Arms, Max. Output Power Per Channel : 16 ohms = 125W; 8 ohms = 125W; 4 ohms = 125W; 2 ohms = 125W; Hi-Z = 125 W (70 Vrms / 100 V peak), Bridged Per Channel : 16 ohms = 250W; 8 ohms = 250W; 4 ohms = 125W; Hi-Z = 250 W (140 Vrms / 200 V peak),</p> <p><b>Performance</b> Gain: 32 dB and VPL: 100 V, THD (20 Hz - 20 kHz for 1W) &lt; 0.1%, THD (1 kHz and 1dB below clipping) &lt;0.05%, Signal To Noise Ratio&gt;112 dBA, Channel separation (Crosstalk 1 kHz) &gt;70 dB, Frequency response (1 W into 8 ohms) +0/-3 dB2.3 Hz - 56 kHz, Input impedance20 kOhm, Input Common Mode Rejection, CMR 50 dB, Output impedance (100Hz) 48 mOhm</p>
Processor	1	<p>Number of Channels : 7.2 Channels, Audyssey: AudysseyMultEQXT, DSX, Dynamic EQ, Dynamic Volume, DTS : DTS HD Master Audio, HD High Resolution, ES Discrete/Matrix, Neo:6, 96/24, Dolby : Dolby TrueHD, Digital, Digital Plus, Pro Logic IIz, EX</p> <p><b>Input / Outputs</b> HDMI In, Component in,HDMI Out, Composite Out, Analog L&amp;R In, Analog L&amp;R Out, Digital Optical In, Digital Coaxial In, Pre-Amplifier Out, Multi-Channel In, Networking : AirPlay, DLNA 1.5 certified Audio/Photo Streaming, Internet Radio, Streaming service capability (Pandora/SiriusXM/flickr and Spotify)</p> <p><b>Performance</b> S/N Ratio : 105 dB, Frequency Response (Analog In) : 10Hz- 100 kHz (+/- 3dB), Video Frequency Response (Component) : 5Hz – 60 Mhz, Video Frequency Response ( Composite, S-Video) : 5Hz – 10MHz</p>

HD Software Media Player	1	<p><b>Compatibility</b> BD-ROM (Single, Dual Layer), BD-R/RE, BDAV/BD-RE (SL/DL), Xvid, DVD, DVD-R/RW, CD-R/RW, JPEG, MP3, AVC</p> <p><b>Quality</b> 24p True Cinema, Full HD 1080p, IP Content Noise Reduction, Video Digital to Analog Converter, Dolby True HD Decoding, DTS-HD Master Audio Bit-Stream Out, Dolby TrueHD bit-stream Output</p>
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Projector	1	<p><b>Panel</b> Panel Type : DLP Chip, Display Method : DLP chip x 3 (R, G, B), DLP projection system, Pixels : 3,147,264</p> <p><b>Projections</b> Lamp (W) : 380 UHM Lamp x 2, Screen Size - Diagonal (m) : 1.78 – 15.24 (16:9 aspect ratio), Brightness (lumens) : 11,000 (x 2), Center-to-corner Uniformity (%) : 90, Contrast Ratio : 10,000:1, Resolution (pixels) : 1366 x 768</p> <p><b>Input</b> HDMI In, Serial In, Video In, LAN</p>
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Motorized Screen	1	400inch Diagonal, Made of High Quality Fabric, Gain
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Vocal / Instrument Mics	20	<p>Freq. Response Close: 35 Hz-22,000 Hz, Freq. Response Far : 70 Hz-22,000 Hz, Polar Pattern : Super Cardioid, Sensitivity, Open Circuit, Dynamic Range : 144 dB, Polarity : Pin 2 positive, referenced to pin with positive pressure on diaphragm, Impedance: 350 Ohms balanced (low-z), Microphone Connector: 3-pin XLR-Type, Stand Adaptor Included</p>
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Digital Audio Mixer	1	<p>No. of Channels = 32</p> <p><b>Frequency Response</b> Mic input to Line output : +0/-1dB, 20Hz – 20kHz, Stereo input to master output : +0.5/-0.5dB, 20Hz – 20kHz</p> <p><b>T.H.D. &amp; Noise (10Hz - 22kHz):</b> Mic In (min gain) to Bus output : 0.006% @ 1kHz, Mic In (max gain) to Bus output : 0.008% @ 1kHz, Stereo input to master output : 0.005% @ 1kHz</p> <p>Mic Input E.I.N : 22Hz-22kHz bandwidth, unweighted : &lt;-126dBu (150 Ohm source) Residual Noise Master output; no inputs routed, Mix fader @0dB, CMRR : 80dB @ 1kHz, Mic input Sampling Frequency : 48kHz, Converter Resolution : 24 bit, Latency Mic Input to Bus output : &lt; 1ms @48kHz, DSP Resolution : 40-bit floating point, <b>Internal Clock:</b> Accuracy : &lt; +/- 50ppm, Jitter : &lt; +/- 5ns</p>
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		<p><b>Input &amp; Output Levels</b>  Mic Inputs : +23dBu max, Stereo Inputs/ Returns: +22dBu max  Bus Outputs : +22dBu max, Nominal Operating Level : 0dBu (-22dBFS)</p> <p><b>Input &amp; Output Impedances</b>  Mic Inputs: 3 kOhms, All other analogue Inputs : &gt;10 kOhms,  Line Outputs : &lt;75 Ohms</p> <p>Oscillator : 20Hz to 20kHz Sine/Pink Noise, variable level,  Channe HP Filter 22Hz-1kHz, 18dB per octave, Metering 7x 8  segment meters for selected channel/bus, masters &amp; monitors  Each fader strip offers 4 segment level plus gain reduction &amp;  Gate Closed status</p> <p><b>EQ ( Input and Bus Outputs)</b>  HF 800Hz-20kHz, +/-15dB shelving ; Hi-Mid 22Hz-20kHz, +/-  15dB, Q=0.3-6.0; Lo-Mid 22Hz-20kHz, +/-15dB, Q=0.3-6.0;  LF22Hz-500Hz, +/-15dB shelving</p>
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## Terms & Conditions

### Notes:

1. **All quotation must reach undersign persons by 16.09.2013, before 5:00 PM in sealed envelopes.**
2. Quotation must be valid till 30 days.
3. Delivery period will be 6 weeks, including appropriate and complete installation at the desired site at IIT Kanpur, New SAC Open Air theatre.
4. The quoted price should be inclusive of all the installation and civil work charges to the satisfaction of the technical and the purchase committee.
5. Extension of delivery period is not allowed.
6. Warranty should be properly mentioned in your quotation, minimum of **five years**.
7. Participating firm should have done similar work in the past and is required to submit the hardcopy of it as a proof along with their quotation to the satisfaction of the purchase committee.
8. See the attached technical detail of the product. The specified products should be quoted.
9. In case of mismatch of technical details, quotation stands valid after approval of technical committee.
10. Participating firms should submit proof of documentation on authorized vendor for the product and eligible to provide the warranty. These documents will be cross verified.
11. Any firms with poor track record of installation services and lapses on warranty claims within IIT Kanpur will be rejected out rightly.
12. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.
13. Indian Institute of Technology, Kanpur is an academic institute and we are exempted from Customs Duty as per the Government of India and certificate will be provided.
14. Payment term
  - a) For foreign currency through LC.
  - b) For Rupees payment 90% on delivery & 10% after satisfactory using /working

Kindly send the quotation (in duplicate) in sealed envelope latest by 16.09.2013 to the following address:

**Room No. 102, New SAC Staff Office Students' Gymkhana IIT Kanpur-208016**

(DOSA, IITK)

(President, Students' Gymkhana)

(Dr. D. Philip)