

**Technical Specification of Sound System 1**


S.N	Parameters	Parameters	Remarks
<b>System Main Unit x 1</b>			
1	Features	It should have Voting, Video tracking, electing, sign-in and discussion functions. Should connect to minimum 75 microphones in one system.	
2	Communication Interface	RS485, RS 232	
3	Power	220 v, 50 Hz	
4	Frequency Response	20 Hz to 20 KHz	
5	SNR	Minimum 78dB	
<b>Chairman Unit Microphone x 1</b>			
6	Type	Condenser	
7	Design	short-stem dual sound head structure	
8	Frequency response	50 Hz-14 KHz or broader range	
9	Sensitivity	Minimum -45±2 dB @1KHz	
10	Features	The Microphone unit should have built-in high fidelity of capacitor sound head, the sound quality should be clear and low noise, it should have efficient whistling inhibition function, super pickup. High-speed holder camera ball automatic tracking and photography. The unit should have minimum 3m T-shape wire to lower interference on wire by electromagnetic wave significantly. full-metal alloy base. The unit should have built-in speaker and headphone jack. The Chairman microphone should be able to turn down the delegate unit anytime by priority button.	
<b>Delegate Unit Microphone x 3</b>			
11	Type	Condenser	
12	Design	Short-stem dual sound head structure	
13	Frequency response	50 Hz-14 KHz or broader range	
14	Sensitivity	-45±2 dB @1KHz	
15	Features	The Microphone unit should have built-in high fidelity of capacitor sound head, the sound quality should be clear and low noise, it should have efficient whistling inhibition function, super pickup. High-speed holder camera ball automatic tracking and photography. The unit should be completed with minimum 3m T-shape wire to lower interference on wire by electromagnetic wave significantly. full-metal alloy base. The unit should have built-in speaker and headphone jack.	
<b>Feed Suppressor x 1</b>			
16	Features	Each microphone channel should have independent phantom power switch which effectively protect both speaker and other audio equipment. It should detect the component that causes reverberation in the signal and remove it before feedback occurs.	
17	Input Channel number	Minimum 4	
18	Sampling Rate	32 KHz	
19	Frequency Response	125Hz~15KHz(voice mode)	
20	SNR	Minimum 90 dB	
21	Signal Delay	Maximum 11 ms (Voice mode)	
<b>Power Sequence Controller x 1</b>			
22	Features	It should have RS232 control interface, externally connected to digital centralized control device. It should have minimum 10-channel multifunctional socket, 220 V, 50 Hz 8-channel switch status should be displayed by panel Should have Front-panel voltage real-time display function Should have Switch on and off timing sequence channel through the panel one-key switch for timing sequence function	

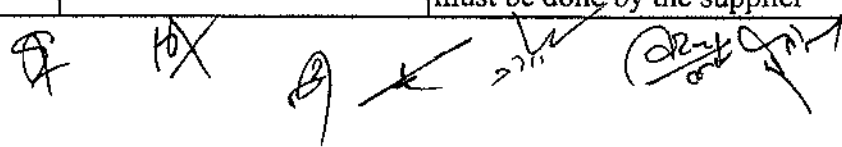


23	Channel Number	8 + 2	
24	Load Per Channel	Minimum 2200 Watt	
25	Time per Step	1 sec	
<b>Power Amplifier x 1</b>			
26	Frequency Response	60 HZ-20KHZ + 1/-3 dB @ -10 dB (Line)	
		70 HZ-20KHZ + 1/-3 dB @ -10 dB (Mic)	
27	Mic/Line Input	Minimum 4	
28	Distortion	Maximum 1 % (@ rated output power, 1 kHz )	
29	Bass Control	Maximum $\pm$ 8 dB	
30	Treble Control	Maximum $\pm$ 8 dB	
31	SNR	Minimum 63 dB	
32	Sensitivity	Minimum 1 mV (Mic) and Minimum 300 mV (Line)	
<b>Ceiling Mount Speaker x 4</b>			
33	Features	Should be mounted in false ceiling or panels	
		Built in multi tapped transformer for 100 V/70V Constant Volt communication	
		IP 44 protection	
34	Size (dual-cone) :	200 mm (8 in)	
35	Coverage (2 kHz) :	Minimum 90°	
36	Output Power	20 Watt	
37	<b>Sensitivity</b>	Minimum 93dB	
<b>Mixer x 1</b>			
38	Inputs	Minimum 10	
39	Mic Inputs	Minimum 6	
40	Stereo Input	Minimum 2	
41	Mic Gain Range	Minimum 6 dB to 50 dB	
42	Line Gain Range	Minimum 10 dB to 34 dB	
43	Frequency Response	10 Hz to 20 kHz	
44	SNR	Minimum 80 dB	
45	DSP Effect	Minimum 16 DSP effect	
46	Equalizer	High : 12 KHz, Middle 2.5 KHz and Low 45 Hz	
47	Features	Should have Bluetooth, USB and SD players	
<b>Podium Microphone x 1</b>			
48	Generation Element	Condenser, back electret	
49	Frequency Response	100 Hz to 15 kHz	
50	Polar pattern	Cardioid	
51	Sensitivity, Open Circuit Voltage, 1 kHz	Maximum 4.5mV/Pascal	
52	Dynamic Range	Minimum 102 dB SPL	
53	Equivalent Output Noise	Maximum 28 dB SPL	
54	Power Requirements	9 to 52 Volt Phantom Supply	
55	Current Consumption	Maximum 5 mA	
56	Finish	Nonreflecting Black	
57	Mounting	Male XLR-type 3-pin Connector	
58	Length	500 mm to 550 mm	
59	Accessories	Windscreen	
<b>Wireless Colar Mic x 1</b>			
60	System Configuration	Receiver, Transmitter, Mic, Cable and Connector	
61	Features	Automatically finds the clearest channel	
		Directional Lavalier microphone	
		Minimum 14 hour battery life	
		Rugged metal transmitter	
		Metal receiver chassis	
62	Antennas	Flexible TNC 1/2 Wave	

63	Audio Frequency Response	80 Hz to 18 kHz $\pm$ 2 dB	
64	Connector Type	1/4" unbalanced, 3-Pin XLR balanced	
65	Controls	On/Off, Set, Up, Down, Sync	
66	Distortion (@ 1 kHz, 40 kHz deviation)	Maximum 1%	
67	Diversity	True Antenna	
68	Dynamic Range	Minimum 95 dB	
69	Number of Channels	Minimum 32	
70	Polar pattern	Cardioid	
71	Receiver Type	Synthesized PLL	
72	Modulation	$\pm$ 40 kHz	
73	RF Sensitivity (12 dB SINAD)	Maximum 1.0 $\mu$ V	
74	Signal to Noise Ratio	Minimum 100 dB	
75	Squelch	Tone code plus Amplitude	
<b>Microphone Cable Coil x 3 coil</b>			
76	Features	19/40 x 2 Core - 100%	
		Conductor: 19/.12mm ABC	
		Cross section: 0.20 mm <sup>2</sup>	
		Insulation type: PE	
		Filler: Cotton Thread	
		Shield:100% Bare Braid	
		Overall dia: 6.0 mm	
<b>XLR Jack x 25 pairs</b>			
77	Features	Standard, 3 pole female cable connector with Nickel housing and silver contacts	
<b>Stereo Jack x 2</b>			
78	Cable	6 mm	
79	Contact Plating	Nickle	
80	Insulation	Thermoplastic	
81	Wire Length	Minimum 3 meters	
<b>Terms and Conditions</b>			
82	Warranty	Minimum 2 years/provided by OEM whichever is greater for all the Components of Sound System	
83	Conditions	The supplier must install the conference system on the site and must provide all necessary accessories including branded Microphone Cable Coil, XLR Jacks, Table clamps necessary for the installation.	
		Each components must be compatible to each other	
84	Standard	ISO or Equivalent for all the components mentioned above	

### Specification of Videowall

S.N	Parameters	Technical Specification	Remarks
<b>Screen</b>			
1	Configuration	Minimum 2 x 2	
2	Screen Size	Minimum 55 "	
3	Resolution	Minimum 1920 x 1080	
4	Brightness	Minimum 700 cd/m2	
5	Viewing Angle	Minimum 175 Degree	
6	Connectivity	Minimum 2 x HDMI, 2 x USB	
7	Bezel to Bezel	Maximum 0.88 mm	
8	Internal Memory	Minimum 8 GB	
<b>Controller</b>			
9	Resolution Support	Minimum 1920 x 1080 @ 60 Hz	
10	Input Interface	Minimum 1 x HDMI, 1 x mobile Signal, 1 x DP	
11	Output interface	Minimum 9 x HDMI	
12	HDMI output	720 p or 1080 p	
13	Controlling Method	Remote, Panel Button, RS232	
14	Video Color Format	Minimum 24 bit, 16.77 M	
15	Processor	With Software and Lifetime License	
<b>Case and Stand</b>			
16	Type	Dual Layer Floor Stand	
17	Material	Aluminum, Plastic and Steel	
18	Fit Screen Size	50" to 60"	
19	Screen Quantity	Minimum 2 x 2	
20	Tilt Range	Minimum ± 2 Degree	
21	Mounting	Locking Caster Wheel	
22	Features	Cable Management	
23	Height	Adjustable	
24	Accessories	5 Mtr brand HDMI cable	
		5 Mtr VGA cable	
		IR controller, Power cable, RS232-RJ 45 connector	
<b>Terms and Conditions</b>			
25	Standard	ISO or Equivalent for all Components	
26	Warranty	Minimum 2 years/Provided by OEM whichever is greater	
27	Final Delivery Requirement	Complete Installation and Equipment operational demonstration and verification must be done by the supplier	





## Specification for Sound System 2

### Specification of Conference System

S.N.	Parameter	Technical Specification	Remark
<b>Conference System Control Unit</b>			
1	Features	Better discussion control	
		Controls and supplies power upto minimum 50 discussion units	
		Minimum 3-Band equalizer for better sound performance	
		Audio interfaces for connecting external audio equipments	
2	Controls and Indicators	Equalizer comprising knobs for frequency range minimum 250Hz to 8kHz	
		Volume control for at least 2x Mic/Aux Input	
		Headphone input and volume control	
		Master volume control	
		Sliding switch for Equalizer On/Off	
3	Interconnections	Minimum 1 xActive microphone control knob	
		Trunk input and output 8-pin DIN connectors for loop through connection	
		Microphone Input with XLR connector	
		Configurable Mic or Aux input with 6.5mm phono jack	
4	Mains Voltage	230 VAC, 50 Hz ( $\pm 10\%$ )	
5	DC voltage supply to contribution units	24V $\pm$ 1V DC	
6	THD at rated output	Minimum 1%	
7	SNR	Minimum -50 dB at rated output	
<b>Inputs</b>			
8	Mic input sensitivity	Maximum 1 mV	
9	Aux input sensitivity	Maximum 100 mV	
10	Frequency Response	200 Hz to 12 kHz	
11	Input Impedance	4.7 kOhm	
<b>Equalizer</b>			
12	Features	Filters for Center frequencies	
13	Filter bandwidth	Minimum 1 octave	
14	Boost/Cut at center frequencies	+6 dB to -6 dB	
15	Equalizer transfer gain	$\pm 1$ dB	
<b>PA Output</b>			
16	Rated output Impedance	80 to 120 Ohm	

17	SNR	Minimum -50 dB at rated output	
<b>Chairman Unit</b>			
18	Features	Priority button for chairman microphone	
		Loudspeaker, automatically muted when microphone is on and/or headphones are connected	
		Internal switch for temporary or permanent muting of delegate microphones when chairman priority button is pressed	
		Microphone ON indicator	
19	Controls and Indicators	Light ring indicator on microphone stem	
		Microphone on/off button	
		Chairman priority button	
		Rotary volume control for adjusting headphone volume	
20	Length of microphone from the base of the stem	Loudspeaker, automatically muted when microphones on	
		Minimum 450 mm	
21	Mounting	Tabletop	
22	Color	Charcoal	
23	Nominal acoustic input at the microphone	Minimum 85 dB SPL	
24	Frequency Response	400 Hz to 10 kHz	
25	Interconnections	1 x 2.7m cable terminated with an 8-pin male connector for loop-through connection to other	
		1 x 8-pin circular female connector for loop-through connection to other delegate or chairman units	
		2 x 3.5 mm stereo headphone sockets	
<b>Conference Delegate Unit</b>			
26	Features	Compact, attractive design	
		Built-in volume control for headphones	
		Microphone with flexible stem and light ring	
		Two headphone sockets (0.14 " stereo headphone sockets)	
27	Controls and Indicators	Microphone on/off button	
		Rotary volume control for adjusting headphone volume	
		Loudspeaker, automatically muted when microphone is on	
		Microphone ON indicator	
28	Length of microphone from the base of the stem	Minimum 450 mm	
29	Mounting	Tabletop	

30	Color	Charcoal	
31	Nominal acoustic input at the microphone	Minimum 85 dB SPL	
32	Frequency Response	400 Hz to 10 kHz	
33	Standard	ISO or Equivalent	
34	Warranty	Minimum 1 year / provided by OEM (whichever is greater)	

### Specification of Mixer Amplifier

S.N.	Parameter	Technical Specification	Remark
1	Features	Minimum 4 microphone / line inputs	
		Music Source Input	
		2-tone chime	
2	Controls and Indicators	On/off Switch	
		Power on LED	
		LED VU meter for master output	
		Master volume knob	
		Volume knobs for microphone inputs	
		Volume knob for background music	
		Knob for treble level	
		Knob for bass level	
	Headphone socket		
3	Type	240 Watt Mixer Amplifier	
4	Power Supply	220 VAC $\pm 10\%$ , 50 Hz	
5	Inrush Current	Minimum 12A	
6	Power Consumption	Maximum 800 VA	
7	Frequency Response	Line: 60 Hz to 20 kHz	
		Mic: 70 Hz to 20 kHz	
8	Distortion	Maximum 1% @ rated output power, 1 kHz	
9	Tone Controls	Bass: $\pm 8$ dB	
		Treble: $\pm 8$ dB	
<b>Audio Inputs</b>			
10	Mic and Line Inputs	Minimum 4	
11	Sensitivity	Mic: Minimum 1 mV	
		Line: Minimum 1 V	
12	Impedance	Mic: Minimum 1 kOhm	
		Line: Minimum 5 kOhm	
13	Dynamic Range	Minimum 93 dB	
14	S/N (Flat at Maximum Volume)	Mic: Minimum 63 dB	
		Line: Minimum 70 dB	
15	S/N (Flat at Minimum Volume)	Minimum 75 dB	
16	CMRR (Mic)	Minimum 40 dB (50 Hz to 20 kHz)	
17	Headroom	Minimum 25 dB	
18	Speech Filter	-3 dB @ 315 Hz, High pass, 6 dB/oct	
19	Phantom Power Supply	16V via 1.2 Ohms (Mic)	
<b>Music Inputs</b>			

20	Connectors	Cinch, stereo converted to mono	
21	Sensitivity	Minimum 200 mV	
22	Impedance	22 kOhms	
23	S/N (Flat at Maximum Volume)	Minimum 75 dB	
24	S/N (Flat at Minimum Volume)	Minimum 80 dB	
25	Headroom	Minimum 25 dB	
26	Speaker Output	Screw terminal, floating, 120W Loudspeaker output @ 4 Ohm: 31V	
27	Accessories	Power Cord, Manual	
28	Standard	ISO or Equivalent	
29	Warranty	Minimum 1 year / provided by OEM (whichever is greater)	

### Ceiling Mount Speaker

S.N.	Parameter	Technical Specification	Remark
1	Features	High sound pressure level Flush-mounting in ceiling	
2	Rated Power	Minimum 24 Watt	
3	Sound pressure level at 24W (1 kHz, 1 m)	Minimum 100 dB (SPL)	
4	Effective frequency range (-10 dB)	Minimum 60 Hz to 18 kHz	
5	Opening angle at 1 kHz/4 kHz (-6 dB)	Minimum 160° / 60°	
6	Color	White	
7	Standard	ISO or Equivalent	
8	Warranty	Minimum 1 year / provided by OEM (whichever is greater)	

Note: Must provide necessary accessories to mount the speaker

### Specification of Podium Microphone

S.N.	Parameter	Technical Specification	Remark
1	Generation Element	Condenser, back electret	
2	Frequency Response	100 Hz to 15 kHz	
3	Polar pattern	Cardioid	
4	Sensitivity, Open Circuit Voltage, 1 kHz	Maximum 4.5mV/Pascal	
5	Dynamic Range	Minimum 102 dB SPL	
6	Equivalent Output Noise	Maximum 28 dB SPL	
7	Power Requirements	9 to 52 Volt Phantom Supply	
8	Current Consumption	Maximum 5 mA	
9	Finish	Nonreflecting Black	
10	Mounting	Male XLR-type 3-pin Connector	
11	Length	Minimum 550 mm	
12	Accessories	Windscreen	



13	Standard	ISO or Equivalent	
14	Warranty	Minimum 1 year / provided by OEM (whichever is greater)	

**Specification of Wireless Microphone System (Lapel Microphone System)**

S.N.	Parameter	Technical Specification	Remark
1	System Configuration	Receiver, Transmitter, Mic, Cable and Connector	
2	Features	Automatically finds the clearest channel	
		Directional Lavalier microphone	
		Minimum 14 hour battery life	
		Rugged metal transmitter Metal receiver chassis	
3	Antennas	Flexible TNC 1/2 Wave	
4	Audio Frequency Response	80 Hz to 18 kHz $\pm$ 2 dB	
5	Connector Type	1/4" unbalanced, 3-Pin XLR balanced	
6	Controls	On/Off, Set, Up, Down, Sync	
7	Distortion (@ 1 kHz, 40 kHz deviation)	Maximum 1%	
8	Diversity	True Antenna	
9	Dynamic Range	Minimum 95 dB	
10	Number of Channels	Minimum 32	
11	Polar pattern	Cardioid	
12	Receiver Type	Synthesized PLL	
13	Modulation	$\pm$ 40 kHz	
14	RF Sensitivity (12 dB SINAD)	Maximum 1.0 $\mu$ V	
15	Signal to Noise Ratio	Minimum 100 dB	
16	Squelch	Tone code plus Amplitude	
17	Standard	ISO or Equivalent	
18	Warranty	Minimum 1 year / provided by OEM (whichever is greater)	

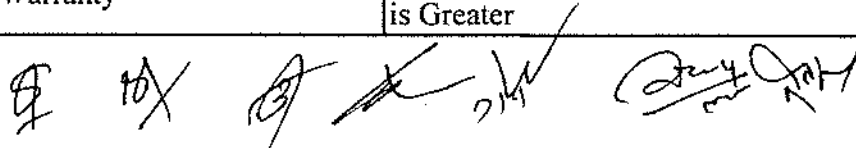
**Note:** 1. The Wireless Microphone System should not be affected by interference from cellular communication

2. The supplier must install the conference system on the site and must provide all necessary accessories including branded Microphone Cable Coil, XLR Jacks, Table clamps necessary for the installation.

*[Handwritten signatures and initials]*

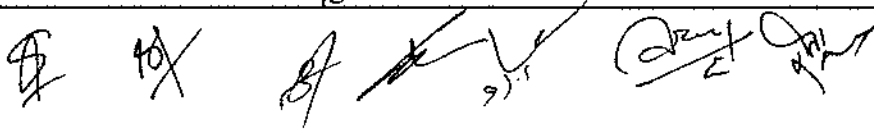
### Specification of 65" TV

S.N	Parameter	Technical Specification	Remarks
1	Type	SUHD Smart TV or Better	
2	Diagonal Class	Minimum 65 inch	
3	Resolution	Minimum 3840 x 2160	
4	Display quality	4K Cinema HDR or better	
5	Refresh Rate	Minimum 120 Hz	
6	Connectivity	Minimum 2 x HDMI, 2 x USB ( at least 1 x USB 3.0), Bluetooth, Wifi, RF, Ethernet	
7	Audio	Minimum 2 x 10W Speaker	
8	Accessories	Remote Control, TV Stand, Wall Mount	
9	Standard	ISO or Equivalent	
10	Warranty	Minimum 2 years/ provided by OEM whichever is Greater	



## Specification of Wall Clock

S.N	Parameter	Technical Specification	Remarks
1	Type	Large Digital Display LED Wall Clock with Date and Temperature	
2	Display	Minimum 18" diagonal	
3	Time	High precision running time	
4	Features	Temperature, Calendar, Time display, Battery operated	
5	Continuity	No loss of data when power off	
6	Standard	ISO or Equivalent	
7	Warranty	Minimum 2 years/provided by OEM whichever is greater	



### Specification of Sliding Sign Board

S.N.	Parameters	Specifications	Remarks
1	Usage	To notify when Conference rooms are in use or vacant	
2	Material	Aluminum and Acrylic	
3	Dimension	10" X 2" (5% tolerance)	
4	Design	Upper Slide Golden in Colour with Engraved Letters (CONFERENCE ROOM) in Black colour.	
		Lower side White in colour with engraved (VACANT) in left side and (OCCUPIED) in right side.	
		Black borders around the board.	
5	Feature	Excellent long distance visibility, Self adhesive 3M adhesive strip on back for mounting	

