PRICE SCHEDULE FOR SUPPLY OF AUDIO VIDEO SYSTEM AT LIBRARY BLOCK OF KOZHIKODE MEDICAL COLLEGE

Sl No	Description of Item	Unit	Qty	Rate (in words and figures)	Amount (in words and figures)
1	**Auditorium- Second Floor**				
	Video & Display System				
1.1	**Supply of 8500 lumens projector with the following specifications, complete with all accessories as required**				
1.1.1	The brightness of the projectors should not be less than 8500 ANSI Lumens				
1.1.2	The Display method should be DLP chip x 1 DLP projection system				
1.1.3	The Panel size of the projector should be 17.0 mm (0.67 in) diagonal				
1.1.4	The projector should have a aspect ratio of 16:10				
1.1.5	The projector should features Dual-lamp drive system with two no's 420 W lamps to provide high brightness				
1.1.6	The total Pixels should be 2,304,000 (1,920 x 1,200) pixels				
1.1.7	The lens should have Powered zoom (throw ratio 1.7-2.4:1)				
1.1.8	powered focus F 1.7-1.9, f 25.6-35.7 mm				

1.1.9	The projector should be capable of achieving Screen size 50–600 inch diagonal from 1.27-15.24 m				
1.1.10	The Center-to-corner uniformity should be 90%				
1.1.11	The Contrast ratio should not be less than 10,000:1				
1.1.12	The Resolution of the projector should be 1,920 x 1,200 pixels				
1.1.13	The projector should have Optical axis shift of Vertical : +50 % from center of screen (powered) & Horizontal : ±10 % from center of screen (powered)				
1.1.14	The projector should have Vertical Keystone correction range of ±40° & Horizontal Keystone correction range of ±15°				
1.1.15	The projector should be able to mount on Ceiling				
1.1.16	The projector mandatorily should have atleast one SDI (SD-SDI, HD-SDI & 3G-SDI) input				
1.1.17	The projector mandatorily should have atleast one HDMI input which is compatible with HDCP				
1.1.18	The Projector should also have at least 2 RGB input & 1 DVI D input				
1.1.19	The projector mandatorily should have atleast one 3D SYNC input and output				
1.1.20	The projector also should have atleast one Composite Video input				

1.1.21	The Projector should have atleast 2 stereo Audio input, one RCA input & One Stereo Audio output				
1.1.22	The Projector should also have Serial input for external control & Serial output for link control				
1.1.23	The Projector should also have two remote control input for wired remote control & external control (parallel) & Remote control output for link control				
1.1.24	The projector should be compatible with both passive and active 3D Projection System				
1.1.25	Projector should achieve 10,000:1 contrast without lowering its high brightness in order to reproduce deeper, richer blacks, and provides images with more detailed textures.				
1.1.26	Projector should features RGB Booster for achieving high image quality with levels of color reproduction and brightness that make each color stand out.				
1.1.27	Projector should have the capability to optimizes the sharpness of each image, based on the super-high-, high-, medium-, and low-frequency components of the extracted image information				
1.1.28	Projector should have the capability to optimizes image quality to improve the color perception of the projected image in bright rooms				

1.1.29	Projector should have imaging mode is similar to DICOM part 14, a medical imaging standard in order to reproduces X-ray images with remarkable clarity				
1.1.30	Projector should have Rec.709 mode for HDTV projection				
1.1.31	Projector should features Waveform monitor function which shows waveforms on the screen and adjust the settings either automatically or manually as preferred during the instances wherein the output level of the source device fluctuates due to the performance of the device or its cable connections, the original black and white levels of the image content cannot be reproduced correctly				
1.1.32	Projector should features native WUXGA resolution for full-HD viewing.				
1.1.33	The projector should features 3D color management system , Full 10-bit image processing, Progressive cinema scan (3:2 pull down), Dynamic sharpness control & Digital noise reduction				
1.1.34	The projector should features Dual lamp system in order to eliminate the threat of interruption if one lamp fail				
1.1.35	Projector should equipped with a DIGITAL LINK terminal for transmission of HDMI, uncompressed HD digital video and control signals (Ethernet, RS-232C) for up to 100 meters (328 feet) through a single CAT5e (STP) cable or higher.				

1.1.36	The projector should have lamp life of atleast 4000hrs in eco mode & 3000 hrs in normal mode				
		Each	1.00		
1.2	**Supply of Zoom lens for 8500 lumens Projector with the following specifications, complete with all accessories as required**	Each	1.00		
1.2.1	Zoom lens for above projector to achieve 222" diagonal at 16:10 aspect ratio from a distance between 3.8m (Minimum) & 4.75m (Maximum)				
1.2.2	Focal distance of the lens should be 11.8 to 14.6mm				
1.2.3	F value of the lens should be 1.85-2.20				
1.2.4	Zoom Lens shall be from the same OEM of above projector				
1.3	**Supply of ceiling mount for 8500 Lumens Projector of following specifications , complete with all accessories as required.**	Each	1.00		
1.3.1	Heavy Duty Universal Projector Mount to provide the strong support for mounting heavy LCD/CRT projectors.				
1.3.2	The mount shall features independent roll : 5°, pitch : 20°and yaw 360°adjustments for quick and precise				

	projector registration				
1.3.3	The mount shall be flush mount to ceiling				
1.3.4	The mount shall features quick connect/disconnect for convenient lamp and filter access on most projectors				
1.3.5	The mount shall provide cable management through top of the mount without additional accessories				
1.3.6	The mount shall include the universal HBU bracket that is compatible with above heavy duty projectors.				
1.3.7	The mount shall be UL Listed				
1.4	**Supply of 222 inch motorized screen for projector with the following specifications, complete with all accessories as required.**	Each	1.00		
1.4.1	222inch (564 cm) diagonal motorized screen with built-in Low voltage controller				
1.4.2	Screen shall have scratch-resistant steel case with white polyester finish and matching end caps.				
1.4.3	Screen should operate instantly at the touch of a button and stops automatically in the "up" and "down" positions.				
1.4.4	The motor shall be inside the roller, for a clean low-profile appearance				

1.4.5	Viewing surface can be lowered to any position at the touch of a switch.				
1.4.6	Screens shall have black borders on all four sides				
1.4.7	Surface Material of the screen should be Matt White				
1.4.8	Image Format of the screen should be 16:10				
1.4.9	Image/Viewable Area of the screen should be 9.79ft Height x 15.67ft width				
1.4.10	The screen weight should be less than 65kg				
1.5	**Supply of desktop personal computer of following specifications, complete with all accessories as required.**	Each	1.00		
1.5.1	Slim tower PC with 4th Generation Intel® Core™ i3-4150 processor (3M Cache, 3.5 GHz)				
1.5.2	The PC shall have integrated Intel® HD Graphics				
1.5.3	The Memory of the PC shall be 4GB (1X4GB) Single Channel DDR3 1600MHz SDRAM Memory				
1.5.4	The aspect ratio of the PC shall be 16:9				
1.5.5	The PC shall be loaded with windows 7/windows 8 operating system				
1.5.6	The PC shall have Integrated Giga bit 10/100/1000 Ethernet				
1.5.7	The PC shall have DVD RW optical disk drive				

1.5.8	The PC shall have 4 no's USB 2.0 & 2 No's USB 3.0 terminal				
1.5.9	The PC shall have one embedded HDMI output				
1.5.10	The PC shall provide two HDMI output by splitting the embedded HDMI output with suitable HDMI splitter				
1.5.11	The PC shall also have one VGA, one RJ-45 (10/100/1000 Ethernet) terminal				
1.5.12	The PC shall have 3-stack audio jacks supporting 5.1 surround sound				
1.5.13	The PC package shall contain wireless mouse and keyboard				
1.6	**Supply of tablet monitor of size of 15.6 inch or more with the following specifications, complete with all accessories as required.**	Each	1.00		
1.6.1	The Tablet Monitor shall have 15.6-inch or more active matrix TFT LCD display				
1.6.2	The Tablet Monitor shall be of WXGA(1366 x 768) Resolution				
1.6.3	The Cordless Pen used for annotation on the Tablet Monitor shall be battery free				
1.6.4	The Cordless Pen shall have 512 level of pressure sensivity				
1.6.5	The Tablet Monitor display shall have 16.77 M Colours				
1.6.6	The response time of the tablet monitor should be less than 9ms				

1.6.7	The Tablet Monitor shall have Luminance of not less than 250cd/m2				
1.6.8	The Contrast Ratio of Tablet Monitor shall not be less than 400:1				
1.6.9	The Tablet Monitor Shall have atleast one DVI-I Inputs & output Terminal				
1.6.10	The aspect Ratio of Tablet Monitor shall be 16:9				
1.6.11	The Cordless pen with the tablet monitor shall deliver more than 500 level of pressure sensitivity				
1.6.12	The Tablet Monitor Shall have atleast 2no's built in USB interface				
1.6.13	The Tablet Monitor shall be less than 5 kg				
1.6.14	The Tablet Monitor should have adjustable stand that can be set to incline from 19 to 72 Degrees				
1.6.15	The Tablet Monitor shall have VCCI Class B, FCC Part15 Subpart B (class B) and C,CE, KCC, BSMI, C-tick, CB, CCC, GOST-R, China RoHS,Korean RoHS, EU RoHS Certifications				
1.6.16	The Tablet Monitor should be compatible with Windows 7 / Vista / XP / 2000, Mac OS X 10.4 or later				
1.7	**Supply of Type A to A USB cable of following specifications, complete with all accessories as required.**	Each	1.00		
1.7.1	10ft USB 3.0 Type A to Type A cable				
1.7.2	USB 3.0 specification of the cable also				

	works with USB 2.0/ 1.1 devices.				
1.7.3	The cable shall suitable for data transfer speeds up to 5 GBps				
1.7.4	The cable shall be fully shielded for error free connections				
1.7.5	The cable shall be Compatible with PC windows 7 / vista / XP				
1.8	**Supply of presentation wall plate with suitable ports of following specifications, complete with all accessories as required.**	Each	1.00		
1.8.1	The wall Plate shall have at least one HDMI ,VGA and Stereo input				
1.8.2	The wall plate shall features a pass-through VGA female to VGA female on 6" pigtail, HDMI female adapter on 10" pigtail, and a 3.5 mm stereo mini jack to captive screw				
1.8.3	The wall plate shall be of one gang size				
1.8.4	The wall Plate shall be HDCP Compliant				
1.8.5	The HDMI & VGA input of the wall plate shall facilitate EDID communication and HDCP exchange between the display and source.				
1.8.6	The wall plate should be of metal construction				

1.9	**Supply of switcher unit with the following specifications, complete with all accessories as required.**	Each	1.00		
1.9.1	The switcher shall transmits HDMI or analogue video, control, and analogue audio up to 70 meters over a shielded CATx cable				
1.9.2	The switcher shall provide atleast two HDMI inputs, one VGA Video input and one twisted pair output.				
1.9.3	The switcher shall provide audio input of atleast one analogue stereo, unbalanced & two digital audio, embedded in the HDMI and audio output of one analogue audio over twisted pair & one embedded digital audio over twisted pair signal				
1.9.4	The Switcher shall support computer video up to 1920x1200, including 1080p/60 and 2K.				
1.9.5	The switcher shall perform Digital conversion of analogue input signals.				
1.9.6	The switcher shall features audio input assignment, and remote power capability.				
1.9.7	The Switcher shall manage EDID communication between the display device and input sources in order to ensure the correct video formats are displayed reliably.				
1.9.8	The Switcher shall allow auto-switching between inputs				

1.9.9	The switcher shall support a maximum transmission distance of 70 meters for all compatible resolutions when used with CATx shielded twisted pair cable				
1.9.10	The switcher shall accept stereo analogue audio signals for simultaneous transmission over the same shielded twisted pair cable and the analogue audio shall not embedded onto the digital video signal.				
1.9.11	The analogue audio input of the switcher can be assigned to any of the video input				
1.9.12	The switcher shall Support HDMI specification features including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats				
1.9.13	The switcher should be compatible with a broad range of multi-channel audio signals, to provide reliable operation with HDMI sources.				
1.9.14	The switcher shall transmit bidirectional RS-232 control and IR signals can be transmitted alongside the video signal, for controlling remote AV devices without the need for additional cabling.				
1.9.15	The switcher shall be able to do remote powering of twisted pair transmitter or receiver over the twisted pair connection				
1.9.16	The switcher shall continuously verifies HDCP compliance for quick				

	&reliable switching				
1.9.17	The switcher shall be HDCP compliant				
1.9.18	The switcher shall have RS-232 Control port				
1.9.19	The switcher shall provide visual indication of system status for real-time feedback and monitoring of key performance parameters.				
1.9.20	The switcher shall provide a means for validating signal flow and operation for quick identification of connectivity issues.				
1.9.21	The switcher should be capable of continuously maintaining DDC communication of EDID and HDCP between a source and display, to ensure direct compatibility and optimal signal transmission between devices.				
1.10	**Supply of suitable mounting kit for switcher with the following specifications, complete with all accessories as required.**	Each	1.00		
1.10.1	The Mount kit shall be Low-Profile Mount Kit that can be used with quarter-rack and half-rack, two-piece enclosure products,.				
1.10.2	The mount shall allow rack-mountable equipment to be installed under a table, desk, or other flat surface				
1.10.3	The mount shall be perfectly fit for the above switcher				

1.10.4	The under desk Mount Kit shall be from the same OEM of the above switcher				
1.11	**Supply of digital twisted pair reciever of the following specifications complete with all accessories as required**	Each	1.00		
1.11.1	Digital twisted pair receiver for receiving HDMI, Analogue audio, bidirectional RS-232 and IR signals upto 70 meters over a shielded CATx cable				
1.11.2	Digital twisted pair receiver also capable of receiving 4K@30 upto 40m over a shielded CATx cable				
1.11.3	Digital twisted pair receiver shall supports computer video up to 2560x1600, HDTV 1080p/60 Deep Color, and 4K resolutions				
1.11.4	Resolution range of the Digital twisted pair receiver shall be 1920x1200 or 1080p @ 60 Hz; 8, 10, or 12 bit color depth 4K (4096x2160) @ 30 Hz, UHD (3840x2160) @ 30 Hz				
1.11.5	Digital twisted pair receiver is compatible with a broad range of multi-channel audio signals, to provide reliable operation with HDMI sources.				
1.11.6	Digital twisted pair receiver shall supports HDMI specification features include data rates up to 10.2 Gbps (3.4 Gbps/colour), Deep Color up to 12-bit, 3D, embedded HD lossless audio				

	formats, and CEC pass-through				
1.11.7	Maximum Pixel clock of the receiver shall be 300MHz				
1.11.8	Digital twisted pair receiver shall accepts analog stereo audio signals from a compatible transmitter over the same shielded twisted pair cable				
1.11.9	Digital twisted pair receiver is capable of receiving 1080p/60 Deep Color, 1920x1200, and 2K signals up 70 meters				
1.11.10	Outputs connector of the twisted pair receiver Input shall be one twisted pair input on RJ-45				
1.11.11	Outputs connector of the twisted pair receiver should be HDMI connector, captive screw connector for stereo audio				
1.11.12	The receiver can be remotely powered over the shielded twisted pair cable by compatible twisted pair transmitters, allowing both devices to share one power Supply, Installation, Programming, Testing & Commissioning				
1.11.13	The Receiver should be capable of continuously maintaining DDC communication of EDID and HDCP between a source and display, to ensure direct compatibility and optimal signal transmission between devices.				

1.11.14	The receiver should be capable of receiving analog stereo audio signal over the same twisted pair cable as the HDMI and control signals, in order to eliminate the need for a separate cable run to support analog audio at the receiver.				
1.11.15	The Receiver should supports simultaneous transmission of bidirectional RS-232 and IR signals from a control system, providing remote control to source equipment or remote displays.				
1.11.16	The receiver shall be capable of receiving the signal transmitted from the distance of 230 feet (70 meters) by the transmitter for all compatible resolutions when used with CAT 5e twisted pair cable				
1.11.17	The receiver shall provide visual indication of system status for real-time feedback and monitoring of key performance parameters.				
1.12	**Supply of Matrix switchers of following specifications complete with all accessories as required.**	Each	1.00		
1.12.1	4K, 8x4 matrix switcher with HDMI and twisted pair inputs and outputs, scaling, an integrated audio power amplifier, comprehensive audio DSP, and a built-in control processor				

1.12.2	Matrix switcher should mandatorily be 4K-capable switcher for integration with computers equipped with compatible graphics cards, 4K media players, 4K cameras, and displays at 4K or UHD native resolution.				
1.12.4	All HDMI and twisted pair inputs of the matrix switcher should accept high resolution signals up to 4K and UHD and can be passed only to the HDMI outputs				
1.12.5	Minimum output of the matrix switcher shall be scaled output of 1920 x 1200 to match the native resolution of the display device				
1.12.6	The matrix switcher shall have Six HDMI input, two twisted pair inputs on RJ-45, six stereo balanced/unbalanced audio inputs on captive screw, four mic/line audio inputs on captive screw				
1.12.7	The device shall have Two HDMI output, two twisted pair outputs on RJ-45, one S/PDIF digital audio output on coaxial RCA, four variable audio outputs on captive screw & speaker outputs on 5 mm, 4-pole captive screw connector				
1.12.8	Two twisted pair inputs and two twisted pair outputs of the device shall support digital signal transmission of HDMI or DVI plus control and analog audio up to minimum 70 meters over a shielded CATx cable				

1.12.9	The output rate from 640x480 to 1920x1200, including HDTV 1080p/60 and 2K shall be individually selected for each of the two scaled twisted pair outputs of the matrix switcher				
1.12.10	The twisted outputs of the device could be configured for compatibility with HDBaseT-enabled displays to send digital video and embedded audio, plus bidirectional RS-232 and IR signals up to minimum 70 meters over a shielded CATx cable				
1.12.11	The device shall reshapes and restores timing of digital video signals at each HDMI output, eliminating high frequency jitter to ensure reliable transmission over long cables				
1.12.12	The device shall supports a maximum transmission distance of minimum 70 meters for all compatible resolutions when used with CATx shielded twisted pair cable				
1.12.13	The device shall provide power to atleast two twisted pair transmitters and two twisted pair receivers over the twisted pair connections				
1.12.14	The device shall capable of managing EDID communication between the display devices and input sources to ensure that the correct video formats are displayed reliably.				
1.12.15	The device shall automatically enables or disables embedded audio and InfoFrames, and sets the correct colour space for proper connection to HDMI and DVI displays				

1.12.16	The device shall provides real-time verification of HDCP status for each digital video input and output				
1.12.17	The device shall authenticate and maintains continuous HDCP encryption between input and output devices for HDMI signals with protected content, to ensure quick and reliable switching.				
1.12.18	The device shall have four mic/line inputs with 48 volt phantom power that can be matrix mixed into any output.				
1.12.19	The device shall have integrated audio DSP provides 32/64-bit floating point audio DSP processing in order to simplify management of gain staging while reducing the possibility of DSP signal clipping.				
1.12.20	The device shall have studio grade 24-bit/48 kHz analogue-to-digital and digital-to-analogue audio converters				
1.12.21	The device shall features HDMI Audio de-embedding & HDMI Audio embedding				
1.12.22	The device shall automatically reduces program audio when a microphone or other incoming audio signal is detected, replacing the need for a separate audio ducking processor				
1.12.23	The device shall provides master volume control for the variable line level and amplified audio outputs, as well as a separate control for mic volume.				

1.12.24	Gain or attenuation can be adjusted for each two-channel audio input of the device to eliminate noticeable differences when switching between sources.				
1.12.25	The device shall provide the capability to break two-channel audio away from its corresponding video signal and route to the audio outputs				
1.12.26	The device shall provide an S/PDIF output for two-channel PCM audio or encoded bit stream audio for Dolby® or DTS® multi-channel surround sound				
1.12.27	The device shall features fixed low latency DSP processing of not more than 4.5 ms within the device to keep the audio in sync with video, and prevents distractions to the presenter resulting from delayed live audio.				
1.12.28	The device shall have digital audio expansion port for cascading digital Audio DSP				
1.12.29	The device shall have inbuilt Class D stereo amplifier with atleast 50 watts per channel into 4 ohms and 25 watts per channel into 8 ohms.				
1.12.30	The device shall have integrated control processor for AV system control and/or shall be controllable through a external control processor				
1.12.31	The device should features bidirectional control insertion eliminates the need for control system wiring to remote devices				

1.12.32	The device shall have captive screw serial ports that can control two RS-232 devices.				
1.12.33	The device shall have Captive screw serial port that can communicate with one RS-232/RS-422/RS-485 serially controlled device.				
1.12.34	The device shall have Two IR/Serial ports for one-way control of external devices				
1.12.35	The device shall have four Digital I/O ports for interfacing with other systems in the room.				
1.12.36	The device shall have Four relays for controlling room functions				
1.12.37	The device shall have Integrated three port network switches for easy connection of touch panels or other network controlled devices.				
1.12.38	The device shall supports 10/100/1000Base-T				
1.12.39	The device shall support Ethernet-controllable devices for control of multiple Ethernet-enabled AV devices such as displays, switchers, and sources.				
1.12.40	The device shall features automatic clock synchronization allows touch panel to display the accurate time and date				
1.12.41	The device shall have RS-232 control port				
1.12.42	The device should be 2U Rack-				

	mountable				
1.13	**Supply of 3 ft HDMI cable of following specification complete as required.**				
1.13.1	3ft Ultra-flexible low bend radius HDMI cable				
1.13.2	The cable shall be 1080p/60 verified				
1.13.3	The cable shall of 36 AWG copper wire construction				
1.13.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60	Each	2.00		
1.13.5	The cable shall support Data rates to 10.2 Gbps				
1.13.6	The cable shall support Refresh rates to 120 Hz				
1.13.7	The cable shall support Color depth to 48 bits - 16 bits per colour				
1.13.8	The cable shall have Gold plated contacts				
1.14	**Supply of 6 ft HDMI cables of following specifications complete as required**				
1.14.1	6ft Ultra-flexible HDMI cable				
1.14.2	The cable shall be 1080p/60 verified	Each	5.00		
1.14.3	The cable shall of 30 AWG copper wire construction				
1.14.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				

1.14.5	The cable shall support Data rates to 10.2 Gbps				
1.14.6	The cable shall support Refresh rates to 120 Hz				
1.14.7	The cable shall support colour depth to 48 bits - 16 bits per colour				
1.14.8	The cable shall have Gold plated contacts				
1.15	**Supply of 3ft high resolution VGA cable of following specification , complete as required**				
1.15.1	3ft micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each end.				
1.15.2	The cable shall be Thin, flexible cable with low profile VGA connectors				
1.15.3	The audio cable shall be atleast 24 inches long one side and 8 inches long on the other side	Each	1.00		
1.15.4	Pin 9 of the 15-pin HD male connector shall be passed through from end to end				
1.15.5	The cable shall be capable of transmitting computer-video, ID bit signals, and audio				
1.15.6	VGA shell of the cable shall be grounded for ESD electrostatic discharge protection				
1.15.7	The cable shall features injection mold with overall foil shield for improved EMI electromagnetic interference				

	isolation				
1.15.8	The cable shall be AWM 20276 rated				
1.16	**Supply of 6 ft High resolution VGA cable of following specifications, complete as required**	Each	1.00		
1.16.1	6ft micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each end.				
1.16.2	The cable shall be Thin, flexible cable with low profile VGA connectors				
1.16.3	The audio cable shall be atleast 24 inches long one side and 8 inches long on the other side				
1.16.4	Pin 9 of the 15-pin HD male connector shall be passed through from end to end				
1.16.5	The cable shall be capable of transmitting computer-video, ID bit signals, and audio				
1.16.6	VGA shell of the cable shall be grounded for ESD electrostatic discharge protection				
1.16.7	The cable shall features injection mold with overall foil shield for improved EMI electromagnetic interference isolation				
1.16.8	The cable shall be AWM 20276 rated				

1.17	**Supply of 6 ft HDMI to DVI-D cable of following specification, complete as required**	Each	2.00		
1.17.1	6ft Standard Speed HDMI to DVI-D cables				
1.17.2	The cable shall be 1080p/60 verified				
1.17.3	The cable shall of 28 AWG copper wire construction				
1.17.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				
1.17.5	The cable shall support Data rates to 4.95 Gbps				
1.17.6	The cable shall support Refresh rates to 60 Hz				
1.17.7	The cable shall support colour depth to 24 bits - 8 bits per colour				
1.17.8	The cable shall have Gold plated contacts				
1.17.9	The cable shall be NEC CL2 rated				
	Audio System				
1.18	**Supply of Gooseneck type microphone of following specifications complete with all accessories as required**	Each	2.00		
1.18.1	500 mm (20") length, condenser gooseneck microphone (cardioid), with led ring, switch and 3-pin male XLR connector				

1.18.2	Should be insensitive to wireless Communication devices such as mobile phones.				
1.18.3	Type of Transducer should be Electret condenser				
1.18.4	Operating principle should be Pressure gradient				
1.18.5	Polar pattern should be Cardioid				
1.18.6	Frequency response of 50 - 19,000 Hz				
1.18.7	Open circuit voltage of 17 mV/Pa				
1.18.8	Nominal impedance should be less than 200 Ω				
1.18.9	Load impedance should be greater than equal to 1 kΩ				
1.18.10	Signal to noise ratio / noise voltage should be 69 dB [A] / 6.0 µV [A]				
1.18.11	Max. SPL should be 107 dB [SPL @ 1% THD]				
1.18.12	Equivalent SPL should be 25 dB [A]				
1.18.13	Microphones can be able to get powered with phantom power source Supply, Installation, Programming, Testing &Commissioninging 8 to52 volts				
1.18.14	Head diameter of the microphone should be less than 15mm				
1.18.15	Gooseneck diameter should be less than 7mm				
1.18.16	Shaft diameter should be less than 22mm				

1.19	**Supply of shock mount for Gooseneck microphone of the following specification complete with all accessories as required**				
1.19.1	Flexible shock mount fixture for above gooseneck microphone with XLR male providing maximum isolation from physical vibration	Each	2.00		
1.19.2	The shock mount should be from the same OEM of above Gooseneck Microphone				
1.20	**Supply of wired type handheld microphone of following specifications , complete with all accessories as required.**				
1.20.1	Wired dynamic microphone with a cardioid polar pattern				
1.20.2	Microphone should features a noiseless on/off switch				
1.20.3	Microphone shall have finely-tuned volume behind the diaphragm for free diaphragm vibrations and improved bass response	Each	1.00		
1.20.4	Should have treble resonator to expand the upper frequency range				
1.20.5	Should have special sound holes behind the diaphragm for a frequency-independent polar pattern & maximum feedback reduction				
1.20.6	The microphone should have a frequency response of 50 - 17000 Hz on close miking and 80 to 17000Hz at				

	Distant(@1m) miking				
1.20.7	The Operating principle of the microphone should be Pressure gradient				
1.20.8	Open circuit voltage at 1 kHz should be 2.4 mV/Pa (-52.5 dBV) ±3 dB				
1.20.9	Nominal impedance of the Microphone should be 600 ohms				
1.20.10	Load impedance of the Microphone should be greater than or equal to 2 kΩ				
1.20.11	Length of the Microphone should be less than 20cm				
1.20.12	Weight of the Microphone should be less than 280g				
1.20.13	The connector of the Microphone should be 3 Pin XLR Male				
1.20.14	Should have accessories like XLR cable, clamp and storage bag along with Microphone System				
1.21	**Supply of wireless handheld microphone of following specifications , complete with all accessories as required.**				
1.21.1	Wireless handheld Microphone system equipped with the automatic frequency setting function, has 16 pre-programmed UHF frequency settings and can be operated with up to 16 channels per frequency range	Each	2.00		

1.21.2	Wireless handheld Microphone system should have true diversity receiver & handheld transmitter				
1.21.3	The receiver of wireless handheld system should be one-channel true diversity receiver				
1.21.4	The receiver should have adjustable squelch 2 µV - 1 mV so as to eliminate Interference by reducing the sensitivity of the channel affected by interference until only the main signal is being is received.				
1.21.5	The receiver should operate frequency range from 506 to 530 MHz, 668 to 692 MHz, 774 to 798 MHz, 790 to 814 MHz and 841 to 865 MHz & able to select one of 16 pre-programmed Frequencies within these ranges.				
1.21.6	The receiver should have Scan function to start an automatic search for interference-free frequencies				
1.21.7	The receiver should have ACT function (Automatic Channel Targeting) to transmit the automatic searched interference-free frequencies to the transmitter				
1.21.8	The receiver should have RF level indicator & AF level indicator				
1.21.9	The receiver should have On/off switch with power on LED				
1.21.10	The receiver should have Switching bandwidth of 24 MHz				
1.21.11	Nominal deviation of the receiver should be ± 40 kHz				

1.21.12	The receiver should have removable TNC antennae				
1.21.13	The Sensitivity of the receiver should be 2 µV				
1.21.14	Signal-to-noise ratio should be greater than 110 dB(A)				
1.21.15	T.H.D of receiver should be less than 0.5% at 1 kHz				
1.21.16	The modulation of handheld transmitter should be FM				
1.21.17	The handheld transmitter shall operate in the frequency range 506 - 530 MHz, 668 - 692 MHz, 774 - 798 MHz, 790 - 814 MHz or 841 - 865 MHz				
1.21.18	The handheld transmitter shall have Modular design with interchangeable microphone capsules				
1.21.19	The handheld transmitter shall have Integrated antenna				
1.21.20	The handheld transmitter shall have Plastic housing				
1.21.21	The handheld transmitter ACT function (Automatic Channel Targeting) for automatic frequency setting				
1.21.22	Max. SPL of the handheld transmitter should be 146 dB				
1.21.23	The Signal-to-noise ratio of the handheld transmitter should be greater than 110 dB				
1.21.24	The T.H.D of the handheld transmitter should be less than 0.5% at 1 kHz				

1.21.25	Radiated transmitter power of handheld transmitter shall be 10 mW				
1.21.26	AF transmission range should be 55 - 18,000 Hz at 80 dB SPL				
1.21.27	Transmission range of the handheld transmitter should be more than 90 m				
1.21.28	Operating time shall be atleast 20 hours with 2 no's AA alkaline Batteries				
1.21.29	Length of the handheld transmitter should be less than 200mm				
1.21.30	Shaft of the handheld transmitter should be less than 40 mm				
1.21.31	Weight of the handheld transmitter with batteries shall be less than 170g				
1.21.32	The receiver & the handheld transmitter should have On/off switch with power on LED				
1.21.33	Polar pattern of the microphone should be Hypercardioid				
1.21.34	Transducer type should be Dynamic				
1.21.35	Frequency response of the microphone should be 90 - 16,000 Hz				
1.21.36	Nominal impedance of the microphone should be 280 Ω				
1.21.37	Load impedance of the microphone should be 1 kΩ				
1.21.38	Open circuit voltage of the microphone should be 3 mV / Pa				
1.21.39	Magnetic field suppression of the microphone should be greater than 20 dB at 50 Hz Dimensions				

1.21.40	Head diameter of the microphone shall be less than 60 mm				
1.22	**Supply of clip on type microphone of following specification , complete with all accessories as required.**	Each	1.00		
1.22.1	Hypercardioid clip-on microphone designed for unobtrusive miking of speech and instruments				
1.22.2	Clip-on microphone should have wide range frequency response				
1.22.3	Microphone should be easily interfaces with the below wireless body pack transmitters				
1.22.4	The microphone should have Lavaliere or instrument mounting capabilities				
1.22.5	The microphone should be powered either by pocket transmitter or phantom power converter for wired use.				
1.22.6	The transduser type of the microphone should be electret condenser				
1.22.7	The microphone should have a frequency response of 40 - 20.000 Hz				
1.22.8	The Operating principle of the microphone should be Pressure gradient				
1.22.9	Max. SPL at 1 kHz for k = 1% should be 120 dB				
1.22.10	S/N ratio rel. to 1 PA should be 60 dB				

1.22.11	Open circuit voltage at 1 kHz should be 30 mV/Pa = -30 dBV				
1.22.12	Nominal impedance of the Microphone should be 200 ohms				
1.22.13	Load impedance of the Microphone should be 1 kΩ				
1.22.14	Length of the Microphone should be less than 25mm				
1.22.15	Weight of the Microphone should be less than 20g				
1.22.16	The connector of the Microphone should be 3 Pin XLR Male				
1.22.17	Should have accessories like XLR cable, clamp and storage bag along with Microphone System				
1.23	**Supply of Wireless Lavaliere Microphone System of the following specifications, complete with all accessories as required.**	Each	1.00		
1.23.1	Wireless system equipped with the automatic frequency setting function, has 16 pre-programmed UHF frequency settings and can be operated with up to 16 channels per frequency range				
1.23.2	Wireless Microphone system should have true diversity receiver pocket transmitter & condenser lavaliere Microphone (Omni directional)				
1.23.3	The receiver of wireless system should be one-channel true diversity receiver				

1.23.4	The receiver should have adjustable squelch 2 µV - 1 mV so as to eliminate Interference by reducing the sensitivity of the channel affected by interference until only the main signal is being is received.				
1.23.5	The receiver should operate frequency range from 506 to 530 MHz, 668 to 692 MHz, 774 to 798 MHz, 790 to 814 MHz and 841 to 865 MHz & able to select one of 16 pre-programmed Frequencies within these ranges.				
1.23.6	The receiver should have Scan function to start an automatic search for interference-free frequencies				
1.23.7	The receiver should have ACT function (Automatic Channel Targeting) to transmit the automatic searched interference-free frequencies to the transmitter				
1.23.8	The receiver should have RF level indicator & AF level indicator				
1.23.9	The receiver should have On/off switch with power on LED				
1.23.10	The receiver should have Switching bandwidth of 24 MHz				
1.23.11	Nominal deviation of the receiver should be ± 40 kHz				
1.23.12	The receiver should have removable TNC antennae				
1.23.13	The Sensitivity of the receiver should be 2 µV				
1.23.14	Signal-to-noise ratio should be greater				

	than 110 dB(A)				
1.23.15	T.H.D of receiver should be less than 0.5% at 1 kHz				
1.23.16	The belt pack transmitter should have ACT infra red interface for frequency transmitting from receiver to transmitter				
1.23.17	The belt pack transmitter should operates in the frequency range 668 to 692 MHz, 774 to 798 MHz, 790 to 814 MHz or 841 to 865 MHz.				
1.23.18	The belt pack transmitter should have adjustable gain control so as to adjust input sensitivity for various microphones or instruments				
1.23.19	The belt pack transmitter should have 4-pin mini XLR input connector (male) to connect microphones or instruments				
1.23.20	The belt pack transmitter should have GT/MT switch to select between microphone or instrument inputs				
1.23.21	The belt pack transmitter should have Swiveling clip to attach to belts, waistbands or guitar straps				
1.23.22	Operating time shall be atleast 20 hours with 2 no's AA alkaline Batteries				
1.23.23	The Modulation of the belt pack transmitter should be FM				
1.23.24	Nominal deviation of the belt pack transmitter should be ± 40 kHz				
1.23.25	Radiated transmitter power of the belt pack transmitter should be 20 mW				

1.23.26	Signal-to-noise ratio of the belt pack transmitter should be greater than 110 dB(A)				
1.23.27	T.H.D of belt pack transmitter should be less than 0.5% at 1 kHz				
1.23.28	Frequency response of the belt pack transmitter should be 50 Hz - 18,000 Hz				
1.23.29	Weight with batteries of the belt pack transmitter should be less than 150 g				
1.23.30	The lavaliere Microphone should have omnidirectional polar pattern				
1.23.31	The lavaliere Microphone should be battery or phantom powered				
1.23.32	Transducer type should be Condenser (back electret)				
1.23.33	Operating principle of the lavaliere Microphone should be Pressure				
1.23.34	Frequency response of the lavaliere Microphone should be 25 - 20,000 Hz				
1.23.35	Open circuit voltage at 1 kHz of the lavaliere Microphone should be30 mV				
1.23.36	Nominal impedance of the lavaliere Microphone should be less than or equal to 200 ohms				
1.23.37	Load impedance of the lavaliere Microphone should be greater than or equal to 1 KΩ				
1.23.38	Max. SPL at 1 kHz of the lavaliere Microphone should be 120 dB				
1.23.39	S/N ratio rel. to 1 Pa of the lavaliere				

	Microphone should be approx. 60 dB				
1.23.40	Length of the lavaliere Microphone should be less than 14 mm				
1.23.41	Head diameter of the lavaliere Microphone should be less than 8mm				
1.23.42	Weight of the lavaliere Microphone without cable should not exceed 2 grams				
1.24	**Supply of Audio mixer of following specifications, complete with all accessories as required.**				
1.24.1	The mixer shall have studio-grade, discrete Class-A mic preamps with individually switchable 48V phantom power in order to deliver more power with lower impedance.				
1.24.2	The mixer shall have low-cut filter and a 26dB pad				
1.24.3	The Mixer Shall have 10 Microphone Inputs with 48V Phantom Power and HPF per Channel	Each	1.00		
1.24.4	The Mixer Shall have 16 Line Inputs (8mono and 4 stereo)				
1.24.5	The Mixer Shall have 2TR Inputs to accept the Output from Analogue Devices or iPod/iPhone				
1.24.6	The Mixer shall have2 AUX Sends + 2 FX Sends				
1.24.7	The Mixer shall have 4 GROUP Buses + ST Bus				

1.24.8	The mixer should have professional 1-knob Compressors with LED Indicators				
1.24.9	The mixer should have high-grade Dual Digital Effects Processors				
1.24.10	The mixer shall have dedicated stereo Digital Hybrid channels				
1.24.11	The mixer shall have Priority Ducker for prioritizing announcements and other signals,				
1.24.12	The mixer shall have leveler for global level control				
1.24.13	The mixer shall have Stereo Image feature to adjusts the width of stereo tracks,				
1.24.14	The mixer shall feature 14 band and flex 9 band modes that can easily be controlled via internal display				
1.24.15	Total harmonic distortion of the mixer should be 0.02% (20Hz-20kHz@ +14dBu)				
1.24.16	Frequency response of the mixer should be +0.5/-1.0dB 20Hz - 20kHz, refer to the nominal output level @1kHz				
1.24.17	The mixer shall feature a built-in USB port to connect and charge your iPod or iPhone for seamless playback with a single connection.				
1.24.18	The mixer shall feature direct recording to a conventional USB storage device				

1.24.19	The mixer should have Integrated Rack-ears for Easy Rack Mounting				
1.24.20	The mixer shall have sweepable mid equalizer				
1.24.21	The mixer shall feature very steep shelving of the high and low frequencies				
1.25	**Supply of Digital system controller of following specifications, complete with all accessories as required.**	Each	1.00		
1.25.1	Two balanced XLR analogue inputs and six balanced XLR analogue outputs digital system controller that provides multiple X-Over, EQ, Delay and Limiting options				
1.25.2	Digital system controller shall be network enabled fin order to facilitate networking capability with two XLR network link ports				
1.25.3	Input Impedance should be greater than 10k Ohm electronically balanced				
1.25.4	Maximum Input level should be +20dBu				
1.25.5	Output Impedance should be less than 100 Ohm, ground balanced				
1.25.6	Maximum Output Level should be +20dBu into 600 Ohm load				
1.25.7	Frequency Response should be 10Hz to 40kHz, +/- 3dB (filters disabled) 20Hz to 20kHz, +/- 0.5dB (filters disabled)				

1.25.8	THD should be less than 0.01%,(+10dBu, 20Hz to 20kHz, 30kHz bandwidth)				
1.25.9	Dynamic Range should be >112dB (A weighted, 22kHz bandwidth) >109dB (un-weighted, 22kHz bandwidth				
1.25.10	Digital system controller shall enable simple configuration and optimisation of loudspeakers in terms of speaker management and room EQ functionality using DSP-based digital crossovers with 96kHz sampling rates				
1.25.11	Should features Intuitive signal flow based interface and 2 x 24 character backlit LCD				
1.25.12	Digital system controller should have routing engine allows any input to be sent to any output.				
1.25.13	Butterworth, Bessel, Linkwitz Riley and Hardman type filters are available on all outputs of the Digital system controller				
1.25.14	Digital system controller shall have RS232 connector enables for enhanced control functions				
1.25.15	Digital system controller shall provide equalisation on each input and output section with two shelving filters and six fully variable parametric sections				
1.25.16	Low distortion limiter is incorporated on each output; threshold is user adjustable with two LED's provided for each output channel to indicate the signal level relative to the limiter threshold.				

1.25.17	Input and output gain is adjustable in 0.2dB steps from -40dB to +15dB.				
1.25.18	Input delay is adjustable in variable steps from 0 to 400ms and output delay is adjustable to 80ms				
1.26	**Supply of USB/RS232 Interface of following specifications, complete with all accessories as required.**				
1.26.1	USB/RS232 Interface for connecting a Windows PC to loudspeaker network to program network enabled speakers and Digital system controller. Also it allows full control, tuning and diagnostics of the network enabled Speakers and Digital system controller in the network.	Each	1.00		
1.26.2	The output should be RJ45 to connect speakers and Digital system controller				
1.26.3	RS232 - Compliance EIA RS232C				
1.26.4	USB - Compliance 1.1 and 2.0				
1.27	**Supply of Loud speaker of following specifications , complete with all accessories as required.**				
1.27.1	Digitally Beam-steering, multi-channel Column array loudspeaker comprising of 16x3"LF & 16x1"HF driver each with its own discrete channel of amplification and integrated DSP (total of 32 channels)	Each	2.00		

1.27.2	Speaker shall achieve even coverage and SPL across the listening plane				
1.27.3	Speaker shall create an asymmetrical pattern in order to allow similar SPL's both in the near and far field.				
1.27.4	Speakers should have the capability to steer the beam away from surfaces that cause reflections to frequencies beyond 12 kHz,				
1.27.5	Speaker shall have intuitive BeamEngine GUI to define target areas by creating a steering algorithm tailored for that specific area.				
1.27.6	Speaker should have the feature of switching between two preset steering configurations for variable or multi-purpose spaces				
1.27.7	Speaker shall have integrated cutting edge DSP, network control and amplification				
1.27.8	Speaker shall features class leading steering control(+/- 70 degrees)				
1.27.9	Speaker shall have densely spaced transducers to defeat the effects of aliasing				
1.27.10	Frequency range(-10dB)of the speakers shall be 130Hz-20kHz				
1.27.11	Integrated Class D Amplifier should have 32x100W @4ohm amplifier channels				
1.27.12	Speaker should have horizontal dispersion 130 degrees				

1.27.13	Vertical dispersion of the speaker shall variable between 10 - 100 degrees				
1.27.14	LF beam control limit of the speaker shall be 400 Hz				
1.27.15	Maximum SPL shall be 100 dB @ 30 m (100 ft)				
1.27.16	Sampling rate shall be 96 kHz				
1.27.17	Speaker should be Software configurable				
1.27.18	Speaker should have RJ45 input				
1.27.19	Speaker shall have analogue inputs as well as AES inputs				
1.27.20	Speaker shall be capable of receiving and transporting digital audio via AES3 stream over long distances				
1.28	**Supply of Subwoofer system of following specifications, complete with all accessories as required.**	Each	2.00		
1.28.1	High impact, powerful band-pass subwoofer system, designed to extend the low frequency response and increase system headroom.				
1.28.2	The subwoofer should ensure well-defined low frequency reinforcement at high sound pressure levels, with extremely low distortion and power compression.				
1.28.3	The subwoofer should have Frequency Response (-3dB) in the range of 40 Hz - 160 Hz				

1.28.4	The subwoofer should have Frequency Response (-10dB) in the range of 35 Hz - 200 Hz				
1.28.5	System Sensitivity (1W @1m) : 100 dB				
1.28.6	Power Handling - Average: 800 watt, Programme: 1600 watt & Peak (10ms): 3200 watt				
1.28.7	Subwoofer should be able to drive with Amplifier Power of 1600 W @ 4 ohms				
1.28.8	Rated Maximum SPL Average: 129 dB & Peak: 135 dB				
1.28.9	The subwoofer should have the nominal Impedance of 4 Ohms				
1.28.10	The subwoofer should utilises a pair of high efficiency 300mm (12") drive units mounted in a compact and sturdy, black or white painted MDF cabinet.				
1.28.11	Distortion				
	10% Full Power (12.65V)				
	2nd Harmonic : 50Hz: 1.38%, 100kHz: 1.29%				
	3rd Harmonic : 50Hz: 0.62% , 100kHz: 0.14%				
	1% Full Power (4.0V)				
	2nd Harmonic : 50Hz: 0.32%, 100kHz: 0.29%				
	3rd Harmonic : 50Hz: 0.18%, 100kHz: 0.16%				
1.28.12	The mounting orientation should be				

	Landscape				
1.29	**Supply of stage monitor speakers of following specifications, complete with all accessories as required.**	Each	2.00		
1.29.1	The speaker should utilizes 305mm (12") latest generation Dual Concentric full-range driver				
1.29.2	The speaker should have tightly controlled 90 degree dispersion for optimum coverage and forward gain				
1.29.3	Peak output 126 dB, rec. amp power 400 W @ 8 Ohms				
1.29.4	The speaker should have mounting points on the rear of the cabinet for Omni-mount/PowerDrive/Multi-Mount type fittings for flexible ceiling positioning				
1.29.5	The Speaker shall have frequency range of 55Hz-38KHz				
1.29.6	The sensitivity of the speaker at 1W @ 1M shall be 97dB				
1.29.7	The average power handling capacity of the Speaker shall be atleast 200 watts				
1.29.8	The speaker shall have rugged and compact birch plywood construction				
1.29.9	The weight of the speaker shall not be more than 17kgs				

1.30	**Supply of 2 channel amplifier - Type II of following specifications , complete with all accessories as required.**	Each	1.00		
1.30.1	2 channel digital amplifier with 2x 1200 Watt / 4 Ohms				
1.30.2	Amplifier should have internal DSP with total of 40 real-time, multi-slope parametric EQs along with adjustable gain, input and output delay, and both high and low-pass filters adjustable to any frequency ,crossover with multiple filter types & 100 User Presets				
1.30.3	Amplifier should have AES3 and analogue inputs with redundant failover				
1.30.4	Software-configured Speaker Protect Limiter				
1.30.5	Peak output voltage per channel should be atleast 70 Vrms				
1.30.6	Max. output current per channel should be atleast 20 Vrms				
1.30.7	Max. Output Power Per Channel would be 800W @ 2ohms, 1200 ohms @ 4 Ohms, 600W @ 8 Ohms & 300W @ 16 Ohms				
1.30.8	THD 20 Hz – 20 kHz for 1 W should be less than 0.1%				
1.30.9	Signal To Noise Ratio should be greater than 102 dBA				
1.30.10	Channel separation (Crosstalk) at 1 kHz should be greater than 80 dB				

1.30.11	Frequency response should be in the range of 2 Hz–42 kHz				
1.30.12	Input impedance should be 18KΩ				
1.30.13	Output impedance should be 25mΩ				
1.30.14	Sensitivity for full power should be 6dBu				
1.30.15	Gain (all DSP controls set to 0dB) should be minimum 36.2 dBu				
1.30.16	Amplifier should have backlit display with navigation buttons and encoder for front panel setup				
1.30.17	Amplifier should have horizontal VU meters on display in operating mode				
1.30.18	Amplifier should have mute buttons on front panel				
1.30.19	Amplifier should have Dual fan & front to rear airflow for proper cooling				
1.31	**Supply of 2 channel amplifier - Type III of following specifications, complete with all accessories as required.**	Each	1.00		
1.31.1	Amplifier shall deliver 2 x 100 watts @ 4 or 8 ohms, or 1 x 200 watts @ 8 ohms (bridged)				
1.31.2	Amplifier shall be ENERGY STAR qualified				
1.31.3	Amplifier shall have 105 dB signal-to-noise ratio and THD+N of less than 0.05%				

1.31.4	Amplifier shall have the capability to eliminate the high frequency switching ripple characteristic of Class D amplifiers				
1.31.5	The amplifier shall feature less heat generation				
1.31.6	The amplifier shall have the capability to smoothes out the high peak currents of the amplifier's current draw, in order to minimize the presence of high frequency harmonics on the AC power line				
1.31.7	Amplifier shall have auto power-down feature to automatically places the amplifier into standby after 25 minutes of inactivity				
1.31.8	The amplifier shall provide attenuation of input signals for adjusting audio system gain staging as well as two-zone applications.				
1.31.9	The amplifier shall detect actual onset of clipping by comparing input and output waveforms.				
1.31.10	The amplifier shall feature automatic gain reduction without audible artifacts to protect speakers from clipping distortion				
1.31.11	The input impedance of the amplifier shall be greater than 10k ohms unbalanced/balanced, DC coupled				
1.31.12	The input nominal level of the amplifier shall be +4 dBu (1.23 Vrms), balanced				
1.31.13	The Maximum level of the amplifier				

	shall be +20 dBu (7.75 Vrms), balanced				
1.31.14	The input sensitivity at 8 ohm or higher speaker load shall be +4 dBu (1.23 Vrms)				
1.31.15	The input sensitivity at 4 ohm speaker load shall be +1 dBu (0.87 Vrms				
1.31.16	The amplifier shall be 1U rack mountable				
1.32	**Supply of Digital Video disc player capable of reading multi formats with the following specifications, complete as required with all accessories.**	Each	1.00		
1.32.1	The DVD Player should be compatible with Dual-Layer DVD-R/DVD/DVDR/DVRW/DVD+R/DVD+RW/SVCD/ VCD/CD/CD-R/CD-RW				
1.32.2	The DVD Player Should Have 1080p Up scaling facility				
1.32.3	The DVD Player shall be WMV Compatible				
1.32.4	The DVD Player shall be Compatible with All Versions of DivX Video (including DivX 6) with Standard Playback of DivX Media Files				
1.32.5	The DVD Player Shall have 108 MHz/12-bit Video DAC				
1.32.6	The DVD Player shall have PureCinema 2:3 Progressive Scan				

1.32.7	The DVD Player shall have facility for I/P Simultaneous Output				
1.32.8	The DVD Player Shall have USB Input for Compressed Video (DivX/WMV), JPEG and Compressed Music				
1.32.9	The DVD Player shall have HD JPEG Playback and JPEG Photo viewer				
1.32.10	The DVD Player shall have controls for adjusting sharpness/Brightness/Contrast/Gamma/Hue/Chroma Level				
1.32.11	The Player should have Zoom Function				
1.32.12	The DVD Player Shall have 96 kHz/24-bit Audio DAC				
1.32.13	The DVD Player shall be Compatible with WMA (Windows /MP3/MPEG-4 AAC				
1.32.14	The DVD Player shall have Dolby Digital Output				
1.32.15	The DVD Player shall have Dialogue Enhancer and Sound Equalizer				
1.32.16	The DVD Player shall have CD to USB Recording				
1.32.17	The DVD Player shall have option for Photo + Music Mix (JPEG Slideshow with Music)				
1.32.18	The DVD Player shall have Disc Navigator for Easy Browsing				
1.32.19	The Player should have atleast one USB Input Terminals				

1.32.20	The Player should have atleast one HDMI Terminal for Digital Audio/Video Out				
1.32.21	The player should have atleast one Coaxial Digital Output, one S-Video Output ,one Audio/one Video Output , one Component Video Output (DVD, Video CD) Output Terminals				
1.32.22	The player shall have wireless Remote control for ease of operation				
1	**Supply of Microphone Patch Bay of following specification, complete with all accessories as required**	Each	2.00		
1.33.1	4-point XLR patch bay to route and organize the XLR connections into a convenient central location on the stage				
1.33.2	The patch bay offers 3 balanced channels with high-quality XLR connectors				
1.33.3	Microphone patch bay shall have female XLR connections on front and male XLR connections on back				
1.33.4	Microphone patch bay shall be floor mounted				
1.33.5	Microphone patch bay shall of aluminium construction				
	Control & Automation				

1.34	**Supply of Serial Port Expander of following specifications, complete with all accessories as required.**	Each	1.00		
1.34.1	Control processor with atleast two bidirectional RS-232 serial ports & One bidirectional RS-232/RS-422/RS-485 serial port .				
1.34.2	The device shall supports Building Management System protocols, such as BACnet, KNX, and DALI				
1.34.3	The device shall manage, monitor, and control AV devices using a standard Ethernet network				
1.34.4	The control processor should have the capacity to receive power and control over a single Ethernet cable				
1.34.5	The device supports 10/100/1000Base-T				
1.34.6	The device supports up to 32 Ethernet-controllable devices				
1.34.7	The device shall features automatic clock synchronization allows compatible touch panel to display the accurate time and date				
1.34.8	The device shall supports control system synchronization to retain and recover the state of their configured endpoints in case of network or power failure				
1.34.9	The control processor shall have SDRAM & Flash memory of atleast 512MB				

1.34.10	The control processor shall supports secure industry standard communications protocols including HTTP (insecure), HTTPS, SSH, SFTP, SMTP, NTP, Discovery Service, DHCP, DNS, ICMP, and IPv4.				
1.34.11	The control processor shall compatible with above specified touch panel				
1.35	**Supply of LED backlit touch panel of size 7 inch or more of following specifications , complete with all accessories as required.**	Each	1.00		
1.35.1	The display of the touch panel shall be 7" diagonal or more LED-backlit LCD touch screen with 800x480 resolution and 18-bit color depth.				
1.35.2	The screen type shall be active matrix TFT colour display				
1.35.3	The contrast ratio of the touch screen shall be atleast 400:1				
1.35.4	The aspect ratio of the touch screen shall be 16:9				
1.35.5	The device shall be resistive touch screen				
1.35.6	The brightness of the touch screen shall be atleast 400 nits				
1.35.7	The colour depth of the touch screen shall be 256k colours				

1.35.8	Touch panel shall have the capability to receive power and control over a single Ethernet cable, to eliminate the need for a local power Supply				
1.35.9	The touch panel shall support 10/100Base-T				
1.35.10	The touch panel shall supports secure industry standard communications protocols including DHCP, DNS, HTTP, HTTPS, ICMP, SFTP, SSH, TCP/IP, UDP/IP				
1.35.11	Touch panel shall have built-in speaker with improved audio performance.				
1.35.12	Touch panel shall have Light sensor adjusts screen brightness as the ambient room lighting changes				
1.35.13	Touch panel shall have configurable red and green status lights indicate a room's availability or call status				
1.35.14	Touch panel shall have system connection status indicator to provide visual feedback if the touch panel is not communicating with a control processor				
1.35.15	The device shall features automatic clock synchronization to display the accurate time and date				
1.35.16	The touch panel shall have adjustable sleep timer to put touch panel into sleep mode & motion detector wakes touch panel				
1.35.17	The touch panel shall have SDRAM & Flash memory of atleast 512MB				

1.35.18	The touch panel shall be wall mounted				
1	**Supply of rack mount for touch panel with the following specifications, complete with all accessories as required.**	Each	1.00		
1.36.1	4RU rack plate that allows the above wall mount Touch panel to be mounted in a standard equipment rack for a clean, professional appearance				
1.36.2	Rack mount shall be from the same OEM of the above Touch panel				
1.37	**Supply of IR Emitter Kit of following specifications, complete with all accessories as required.**	Each	2.00		
1.37.1	The IR emitter Kit shall contains IR-emitting diode with a 3 m wire lead, IR emitter shield, and mounting adhesive				
1.37.2	The kit shall be installed directly on the IR control window of the controlled equipment				
1.37.3	The IR emitter Kit shall perform remote control of AV equipment via IR				
1.37.4	The device shall also features a "Y" configuration with one IR source terminating in two emitters with shields for use in equipment racks and other applications requiring remote control of two devices.				

1.38	**Supply of Single Port Power Injector of folowing specifications, complete with all accessories as required.**	Each	1.00		
1.38.1	Single port power injector to provides power to above control systems remotely to eliminate the need for a local power Supply, Installation, Programming, Testing & Commissioning				
1.38.2	The device shall not impact video, audio, bidirectional RS-232 and IR, and Ethernet signal quality.				
1.38.3	The device shall provide real-time status LEDs for troubleshooting and monitoring.				
1.38.4	The Power output of the device shall be +48 VDC, 0.35 A, 16.8 watts				
1.38.5	The device shall be UL/c-UL listed and CE compliant				
1.38.6	The device shall be mount on a variety of surfaces, including rack rails, tables, lecterns, projector poles, and table legs				
1.39	**Supply of Relay controller of following specifications, complete with all accessories as required.**	Each	1.00		
1.39.1	Low Voltage Relay Controller to control various electric appliances setting at one place through remote keypad or local keypad or RS 232 interface.				
1.39.2	The device shall have 4 no's Low				

	voltage relays				
1.39.3	The Low Voltage Relay Controller shall have 2bit unit identifier for RS232C controller so that 4 Relay controller box can be controlled through one port of RS232C system controller				
1.40	**Supply of Network Switch of following specifications, complete with all accessories as required.**	Each	1.00		
1.40.1	The network switch shall have eight 10/100/1000 Mbps Gigabit ports				
1.40.2	The network switch shall have 16 Gbps switching fabric				
1.40.3	The device shall features auto MDI/MDIX crossover for all ports				
1.40.4	The device shall perform secure store-and-forward switching scheme				
1.40.5	The device shall support Full/half-duplex for Ethernet/Fast Ethernet speeds				
1.40.6	RAM Buffer of the device shall be 128 KBytes per device				
1.40.7	The device shall support IEE 802.3x Flow Control				
1.40.8	The device shall supports 9,216 Byte Jumbo Frames				
1.40.9	The device shall be RoHS compliant				

	Cables & Connectors				
1.41	**Supply of 36U Equipment Rack of following specifications, complete with all accessories as required**	Each	1.00		
1.41.1	Equipment rack should be of 36U				
1.41.2	Rack should have 20no's IEC socket				
1.41.3	Rack should have Castor wheels with brake and without brake				
1.41.4	Rack should have Cable manager				
1.41.5	Rack should have 5 No's 250 mm canti lever shelf for placing non rack mountable equipment				
1.41.6	Rack should have Monitor Tray – Ventilation & Fan assembly				
1.41.7	Rack should also have Front and back doors				
1.41.8	Rack should also have Cooling Fan				
1.41.9	Rack should also have minimum 4 sets of Mounting H/W				
1.42	**Supply & Laying of Speaker cable of following specifications, complete as required.**	Mtr	200.00		
1.42.1	Speaker cable for connecting speakers and amplifiers				
1.42.2	Cable shall have single colour-coded pair, 16 AWG bare copper conductors.				
1.42.3	Cable shall offers a higher conductor strand count than comparable cables				

	in its class				
1.42.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
1.43	**Supply & Laying of Dual twisted pair Audio Cable of following specifications , complete as required.**	Mtr	180.00		
1.43.1	Audio Cables/Serial Control Cables for transmission and distribution of audio and control signals.				
1.43.2	Cable should have Dual 22 AWG shielded twisted pairs with individual drain wires				
1.43.3	Cable shall have tinned copper drain wire on the inside of the foil shield.				
1.43.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
1.44	**Supply & Laying of One twisted pair Audio Cable of following specifications, complete as required.**	Mtr	200.00		
1.44.1	Audio Cables/Serial Control Cables for transmission and distribution of audio and control signals.				
1.44.2	Cable should have one 22 AWG shielded twisted pairs with individual drain wires				
1.44.3	Cable shall have tinned copper drain wire on the inside of the foil shield.				

1.44.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
1.45	**Supply & Laying of Shielded twisted pair cable of following specifications, complete as required**	Mtr	130.00		
1.45.1	24 AWG solid copper construction shielded twisted pair cable				
1.45.2	The cable shall be certified to 475 MHz bandwidth at distances up 100 meters and has been independently tested and verified to meet performance requirements set by the HDBaseT Alliance				
1.45.3	Cable shall provides added protection from outside interference and ensures high quality signal transmission				
1.45.4	Cable shall be Independently tested and verified to meet performance requirements set by HDBaseT Alliance				
1.45.5	Cable shall utilize SF/UTP design with with four unshielded 24 AWG twisted pair conductors inside an overall braid and foil shield				
1.45.6	Cable shall be non-plenum rated				
1.46	**Supply & Termination of RJ-45 plug of following specifications, complete with all accessories as required.**	Mtr	10.00		
1.46.1	Shielded RJ-45 plug for twisted pair cable				

1.46.2	RJ-45 plug shall have metal strain relief and ground bonding				
1.46.3	RJ-45 plug shall be ideal for high EMI/RFI environments				
1.46.4	RJ-45 plug shall have conductor alignment guide reduces crosstalk and signal interference				
1.46.5	RJ-45 plug shall have Gold plated contacts				
1.47	**Supply and Termination of Connectors of following specification, complete as required.**	Set	1.00		
	High quality branded XLR, AUDIO. RCA, Stereo connectors with Hood covers				
	Recording System				
1.48	**Supply of HD Recorder of following specifications, complete with all accessories as required.**	Each	1.00		
1.48.1	The Recorder shall have two removable HDD Enclosure for SATA HDD/SSD solid state device				
1.48.2	The Recorder shall have atleast one HD/SD-SDI video input & analogue Stereo Pair 2-Channelsaudio inputs				
1.48.3	The Recorder shall have atleast one HD/SD-SDI & HDMI video Outputs and Stereo Pair 2-Channels audio output				

1.48.4	The Recorder shall support 1920x1080 50i/59.94i/60i, 1920x1080 24p/23,96p, 1280x720 50P/59.94P/60P, 720x576i or 720x480i Resolutions				
1.48.5	The Recorder shall provide a choice of recording in MPEG-II Long-GOP or intra-frame (i-frame) with 4:2:2 color sampling				
1.48.6	The Recorder shall have HD/SDI input, output and loop thru with embedded audio				
1.48.7	The audio recording Format shall be PCM 24-bits / 8-Channels / 48KHz Sampling Rate				
1.48.8	The Recorder shall support NTFS format				
1.48.9	The Recorder shall have HDMI output with embedded audio				
1.48.10	The Recorder Shall have 2-CH balanced audio inputs, support embedded Audio				
1.48.11	The Recorder shall have Audio level indicators, earphone interface for audio monitoring with volume control				
1.48.12	The Recorder shall have External Gen-Lock input and loop thru (B.B or tri-level),Time code(TC) input and loop through RS-232/422 and GPI remote interface				
1.48.13	The recorder shall have SD and HD Mode Recording options				
1.48.14	SD Mode Recording shall be selectable 8, 15, 30 or 50 Mbps Long GOP 4:2:0 or 4:2:2 and 25 or 50 Mbps i-frame only 8-				

	bit 4:2:2				
1.48.15	HD Mode Recording shall be selectable 10, 25, 35, 65 or 100 Mbps Long GOP 4:2:0 or 4:2:2 and 100/125 Mbps i-frame 8-bit 4:2:2				
1.48.16	The recorded file shall MXF/OP1A file format				
1.48.17	320GB Hard Drive with Enclosure shall be provided along with recorder				
1.48.18	The recorder shall conform to the 292M SMTP Standard.				
1.48.19	The recorder shall be rack mountable				
1.49	**Supply of HD Camera of following specifications, complete with all accessories as required.**				
1.49.1	The Camera shall be a PTZ one with 20X optical zoom				
1.49.2	The camera shall offer a 1080/20 HD Resolution				
1.49.3	The camera shall feature a ½ 8 type Exmor CMOS Sensor	Each	1.00		
1.49.4	The camera shall have the RS-232C/RS-422 interface protocol for external device control				
1.49.5	The camera shall have 20x Optical Zoom and 12x Digital Zoom				
1.49.6	The minimum object distance for the camera shall be 10mm (wide) - 800mm				

	(tele)				
1.49.7	The S/N Ratio of Camera shall be more than 50 db				
1.49.8	The camera shall support 1080p/29.97, 1080p/25, 1080i/59.94 (frame out 1080PsF29.97), 1080i/50 (frame out 1080PsF25) 720p/59.94, 720p/50, 720p/29.97, 720p/25 HD signal system and NTSC/PAL SD signal				
1.49.9	The camera shall have HD-SDI and VBS Video Output				
1.49.10	The camera shall have atleast 6 Preset Positions				
1.49.11	The camera shall have auto exposure				
1.49.12	The Camera shall have Horizontal Viewing angle 55.4° (wide) to 2.9° (tele)				
1.49.13	The Pan Angle of camera shall be ± 170°and the pan speed shall be 100°/sec				
1.49.14	The Tilt Angle of camera shall be +90°/-20°and tilting Speed shall be 90°/sec				
1.49.15	The Minimum Illumination of Camera in High Sensitivity Mode shall be0.5 lx (F1.6, 50 IRE) and Normal Mode shall be 1.7 lx (F1.5, 50 IRE)				
1.49.16	The Minimum object Distance of camera shall be in the 10mm (wide) - 800mm (tele)				
1.49.17	The shutter speed of camera shall not be less than 1 to 1/10,000 s				

1.49.18	The camera shall be wall mounted or ceiling mounted				
1.50	**Supply of Camera Mount for the HD camera , with the following specifications, complete with all accessories as required.**	Each	1.00		
1.50.1	Thin Profile Wall Mount Bracket for mounting above camera				
1.50.2	Wall Mount Bracket shall mounts to drywall or 2-gang electrical box				
1.50.3	Mounting hardware shall be provided along with camera mount				
1.51	**Supply & Laying of RG6 Cable of following specifications, complete as required.**	Mtr	50.00		
1.51.1	Cable shall transmit the highest-resolution signals with the lowest losses for the most critical applications and longest cable runs including high scan rate analog and demanding digital SDI/HD-SDI applications				
1.51.2	Cable shall have single, 18 AWG, 75 ohm coaxial conductor double-shielded with foil and tinned copper serve to reduce interference.				
1.51.3	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
	Total Amount – **Auditorium- Second Floor**				

Sl No	Description of Item	Unit	Qty	Rate (in words and figures)	Amount (in words and figures)
2	**LECTURE HALL- FIRST FLOOR**				
	Video & Display System				
2.1	**Supply of 4300 Lumens Projector with the following specifications, complete with all accessories as required.**	Each	1.00		
2.1.1	The brightness of the projectors should not be less than 4300 ANSI Lumens				
2.1.2	The LCD Panel size of the projector should be 15 mm (0.59 inches) diagonal (16:10 aspect ratio)				
2.1.3	The projector should have a aspect ratio of 16:10				
2.1.4	The Display method should be Transparent LCD panel (x 3, R/G/B)				
2.1.5	The total Pixels should be 1,024,000 (1,280 x 800) x 3, total of 3,072,000 pixels				
2.1.6	The Lens of the projector should have atleast 1.6x manual zoom				
2.1.7	The lens should have throw ratio: 1.18–1.90:1 & manual focus of F 1.60-2.12, f 15.28-24.62 mm				
2.1.8	The projector should be capable of achieving Screen size 30–300 inch diagonal from 0.76 –7.62 m				
2.1.9	The Center-to-corner uniformity should				

	be 85%				
2.1.10	The Contrast ratio should not be less than 3,500:1				
2.1.11	The Resolution of the projector should be 1,280 x 800 pixels				
2.1.12	The projector should have vertical Optical axis shift of +48 %				
2.1.13	The projector should have Vertical Keystone correction range of ±30°				
2.1.14	The projector should be able to mount on Ceiling				
2.1.15	The projector mandatorily should have HDMI input which is compatible with HDCP				
2.1.16	The Projector shall have at least 1 VGA input & output				
2.1.17	The projector also shall have atleast one Composite Video & one S-Video Input				
2.1.18	The Projector should have atleast one stereo Audio input & output				
2.1.19	The Projector should also have Serial input for external control & LAN				
2.1.20	The Weight of the projector should not more than 5 kg				
2.1.21	Wireless remote control unit, carrying bag & one RGB cable should be supplied along with the projector				
2.1.22	The projector should have lamp replacement cycle of up to 4,000 hours				

2.1.23	The sound of the cooling should not be more than 35dB on normal mode and 29db on eco mode.				
2.1.24	The projector should have the Intelligent Lamp Control system to automatically adjust the lamp output in accordance with the brightness of the projected image.				
2.1.25	The Standby Power Consumption of the projector should be less than 0.5 W				
2.1.26	The Projector should have 10-Watt Speakers and a Microphone Input for audio Playback Directly from the Projector				
2.1.27	The Projector should be Monitored remotely and Control over a LAN				
2.1.28	The projector should have the feature of Direct Power Off right after use				
2.2	**Supply of ceiling mount for 4300 lumens projector with the following specifications, complete with all accessories as required.**	Each	1.00		
2.2.1	Metal powder coated Ceiling mount kit for above projector				
2.2.2	Ceiling mount shall flexible for height adjustment from 4 feet to 10 feet				
2.2.3	Ceiling mount shall have Weight bearing capacity of atleast 10kg				
2.2.4	Ceiling mount shall have the provision to carry cables inside the Stem Pipe.				
2.2.5	The mounting hardware shall be provided along with the ceiling mount				

	kit				
2.3	**Supply of 137 inch motorized screen for projector with the following specifications, complete with all accessories as required.**	Each	1.00		
2.3.1	137 inch (348) diagonal motorized screen with built-in Low voltage controller				
2.3.2	Screen shall have scratch-resistant steel case with white polyester finish and matching end caps.				
2.3.3	Screen should operate instantly at the touch of a button and stops automatically in the "up" and "down" positions.				
2.3.4	The motor shall be inside the roller, for a clean low-profile appearance				
2.3.5	Viewing surface can be lowered to any position at the touch of a switch.				
2.3.6	Screens shall have black borders on all four sides				
2.3.7	Surface Material of the screen should be Matt White				
2.3.8	Image Format of the screen should be 16:10				
2.3.9	Image/Viewable Area of the screen should be 6.05ft Height x 9.68ft width				
2.3.10	The screen weight should be less than 25kg				

2.4	**Supply of desktop personal computer of following specifications, complete with all accessories as required.**				
2.4.1	Slim tower PC with 4th Generation Intel® Core™ i3-4150 processor (3M Cache, 3.5 GHz)				
2.4.2	The PC shall have integrated Intel® HD Graphics				
2.4.3	The Memory of the PC shall be 4GB (1X4GB) Single Channel DDR3 1600MHz SDRAM Memory				
2.4.4	The aspect ratio of the PC shall be 16:9				
2.4.5	The PC shall be loaded with windows 7/windows 8 operating system				
2.4.6	The PC shall have Integrated Giga bit 10/100/1000 Ethernet	Each	1.00		
2.4.7	The PC shall have DVD RW optical disk drive				
2.4.8	The PC shall have 4 no's USB 2.0 & 2 No's USB 3.0 terminal				
2.4.9	The PC shall have one embedded HDMI output				
2.4.10	The PC shall provide two HDMI output by splitting the embedded HDMI output with suitable HDMI splitter				
2.4.11	The PC shall also have one VGA, one RJ-45 (10/100/1000 Ethernet) terminal				
2.4.12	The PC shall have 3-stack audio jacks supporting 5.1 surround sound				
2.4.13	The PC package shall contain wireless mouse and keyboard				

2.5	**Supply of tablet monitor of size of 15.6 inch or more with the following specifications, complete with all accessories as required.**				
2.5.1	The Tablet Monitor shall have 15.6-inch or more active matrix TFT LCD display				
2.5.2	The Tablet Monitor shall be of WXGA(1366 x 768) Resolution				
2.5.3	The Cordless Pen used for annotation on the Tablet Monitor shall be battery free				
2.5.4	The Cordless Pen shall have 512 level of pressure sensivity				
2.5.5	The Tablet Monitor display shall have 16.77 M Colours				
2.5.6	The response time of the tablet monitor should be less than 9ms	Each	1.00		
2.5.7	The Tablet Monitor shall have Luminance of not less than 250cd/m2				
2.5.8	The Contrast Ratio of Tablet Monitor shall not be less than 400:1				
2.5.9	The Tablet Monitor Shall have atleast one DVI-I Inputs & output Terminal				
2.5.10	The aspect Ratio of Tablet Monitor shall be 16:9				
2.5.11	The Cordless pen with the tablet monitor shall deliver more than 500 level of pressure sensitivity				
2.5.12	The Tablet Monitor Shall have atleast 2no's built in USB interface				
2.5.13	The Tablet Monitor shall be less than 5				

	kg				
2.5.14	The Tablet Monitor should have adjustable stand that can be set to incline from 19 to 72 Degrees				
2.5.15	The Tablet Monitor shall have VCCI Class B, FCC Part15 Subpart B (class B) and C,CE, KCC, BSMI, C-tick, CB, CCC, GOST-R, China RoHS,Korean RoHS, EU RoHS Certifications				
2.5.16	The Tablet Monitor should be compatible with Windows 7 / Vista / XP / 2000, Mac OS X 10.4 or later				
2.6	**Supply of Type A to A USB cable of following specifications, complete with all accessories as required.**	Each	1.00		
2.6.1	10ft USB 3.0 Type A to Type A cable				
2.6.2	USB 3.0 specification of the cable also works with USB 2.0/ 1.1 devices.				
2.6.3	The cable shall suitable for data transfer speeds up to 5 GBps				
2.6.4	The cable shall be fully shielded for error free connections				
2.6.5	The cable shall be Compatible with PC windows 7 / vista / XP				
2.7	**Supply of presentation wall plate with suitable ports of following specifications, complete with all accessories as required.**	Each	1.00		
2.7.1	The wall Plate shall have at least one HDMI ,VGA and Stereo input				

2.7.2	The wall plate shall features a pass-through VGA female to VGA female on 6" pigtail, HDMI female adapter on 10" pigtail, and a 3.5 mm stereo mini jack to captive screw				
2.7.3	The wall plate shall be of one gang size				
2.7.4	The wall Plate shall be HDCP Compliant				
2.7.5	The HDMI & VGA input of the wall plate shall facilitate EDID communication and HDCP exchange between the display and source.				
2.7.6	The wall plate should be of metal construction				
2.8	**Supply of Scaler system with the following specifications, complete with all accessories as required.**	Each	1.00		
2.8.1	The scaler shall have three HDMI inputs, one universal 15-pin HD input for RGB, component video, S-video, or composite video input, stereo balanced/unbalanced audio inputs on captive screw; unbalanced stereo audio input on one 3.5 mm stereo mini jack and				
2.8.2	The scaler shall have one twisted pair output & one stereo audio output on captive screw				
2.8.3	The scaler shall features an advanced scaling engine that can scale HDMI, RGB, component, and standard definition video signals to a common high resolution output				

2.8.4	The scaler shall have advanced scaling engine with 30-bit processing for enhanced colour accuracy and picture detail				
2.8.5	The scaler shall perform deinterlacing for 1080i signals from HD sources delivers optimized image quality				
2.8.6	The scaler shall allow signal extension up to 100 meters over shielded CATx cable				
2.8.7	The scaler shall provide the convenience of fast and reliable switching, along with a high performance scaling engine for HDMI and analogue video sources				
2.8.8	The scaler shall integrates HDMI, analogue video, and audio sources into presentation systems				
2.8.9	The scaler shall support HDMI specification features include data rates up to 6.75 Gbps, Deep Colour, and HD lossless audio formats				
2.8.10	The analogue audio signals on the input shall be embedded onto the twisted pair output.				
2.8.11	The scaler shall perform audio de-embedding of HDMI two-channel PCM audio to the analogue output or multi-channel bitstream formats can be passed to the twisted pair output				
2.8.12	The scaler shall manage EDID communication between the display device and input sources in order to ensure the correct video formats are displayed reliably.				

2.8.13	The scaler shall authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching				
2.8.14	The scaler shall features automatic 3:2 and 2:2 pulldown detection to maximize image quality for content sources originating from film.				
2.8.15	The scaler shall accepts and outputs signals up to 1920x1200, including HDTV 1080p/60 and 2K.				
2.8.16	The scaler shall provides real-time verification of HDCP status for each digital video input and output.				
2.8.17	The scaler shall automatically enables or disables embedded audio and InfoFrames, and sets the correct color space for proper connection to HDMI and DVI displays				
2.8.18	The scaler shall allow auto-switching between inputs				
2.8.19	The scaler shall be HDCP compliant				
2.8.20	The scaler shall provide master volume control for the analogue line level output, as well as DTP analogue audio				
2.8.21	The audio output of the scaler shall be automatically delayed to compensate for latency introduced by the video processing.				
2.8.22	The scaler shall features audio input assignment so that each video input can be assigned to either of the two available analogue audio inputs				

2.8.23	The scaler shall be housed in a compact 1U, half rack width enclosure				
2.8.24	The switcher shall have RS-232 Control port				
2.9	**Supply of suitable mounting kit for scaler with the following specifications, complete with all accessories as required.**	Each	1.00		
2.9.1	The Mount kit shall be Low-Profile Mount Kit that can be used with 1/8, 1/4, and 1/2 Rack Width Products,.				
2.9.2	The mount shall allow rack-mountable equipment to be installed under a table, desk, or other flat surface				
2.9.3	The mount shall be perfectly fit for the above scaler				
2.9.4	The under desk Mount Kit shall be from the same OEM of the above switcher				
2.10	**Supply of digital twisted pair reciever of the following specifications complete with all accessories as required**	Each	1.00		
2.10.1	Digital twisted pair receiver for receiving HDMI, Analogue audio, bidirectional RS-232 and IR signals upto 70 meters over a shielded CATx cable				
2.10.2	Digital twisted pair receiver also capable of receiving 4K@30 upto 40m over a shielded CATx cable				
2.10.3	Digital twisted pair receiver shall supports computer video up to 2560x1600, HDTV 1080p/60 Deep Color, and 4K resolutions				

2.10.4	Resolution range of the Digital twisted pair receiver shall be 1920x1200 or 1080p @ 60 Hz; 8, 10, or 12 bit color depth 4K (4096x2160) @ 30 Hz, UHD (3840x2160) @ 30 Hz				
2.10.5	Digital twisted pair receiver is compatible with a broad range of multi-channel audio signals, to provide reliable operation with HDMI sources.				
2.10.6	Digital twisted pair receiver shall supports HDMI specification features include data rates up to 10.2 Gbps (3.4 Gbps/colour), Deep Color up to 12-bit, 3D, embedded HD lossless audio formats, and CEC pass-through				
2.10.7	Maximum Pixel clock of the receiver shall be 300MHz				
2.10.8	Digital twisted pair receiver shall accepts analog stereo audio signals from a compatible transmitter over the same shielded twisted pair cable				
2.10.9	Digital twisted pair receiver is capable of receiving 1080p/60 Deep Color, 1920x1200, and 2K signals up 70 meters				
2.10.10	Outputs connector of the twisted pair receiver Input shall be one twisted pair input on RJ-45				
2.10.11	Outputs connector of the twisted pair receiver should be HDMI connector, captive screw connector for stereo audio				
2.10.12	The receiver can be remotely powered over the shielded twisted pair cable by compatible twisted pair transmitters, allowing both devices to share one power Supply, Installation,				

	Programming, Testing & Commissioning				
2.10.13	The Receiver should be capable of continuously maintaining DDC communication of EDID and HDCP between a source and display, to ensure direct compatibility and optimal signal transmission between devices.				
2.10.14	The receiver should be capable of receiving analog stereo audio signal over the same twisted pair cable as the HDMI and control signals, in order to eliminate the need for a separate cable run to support analog audio at the receiver.				
2.10.15	The Receiver should supports simultaneous transmission of bidirectional RS-232 and IR signals from a control system, providing remote control to source equipment or remote displays.				
2.10.16	The receiver shall be capable of receiving the signal transmitted from the distance of 230 feet (70 meters) by the transmitter for all compatible resolutions when used with CAT 5e twisted pair cable				
2.10.17	The receiver shall provide visual indication of system status for real-time feedback and monitoring of key performance parameters.				
2.11	**Supply of 3 ft HDMI cable of following specification complete as required.**	Each	2.00		

2.11.1	3ft Ultra-flexible low bend radius HDMI cable				
2.11.2	The cable shall be 1080p/60 verified				
2.11.3	The cable shall of 36 AWG copper wire construction				
2.11.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				
2.11.5	The cable shall support Data rates to 10.2 Gbps				
2.11.6	The cable shall support Refresh rates to 120 Hz				
2.11.7	The cable shall support Color depth to 48 bits - 16 bits per colour				
2.11.8	The cable shall have Gold plated contacts				
2.12	**Supply of 6 ft HDMI cables of following specifications complete as required**	Each	4.00		
2.12.1	6ft Ultra-flexible HDMI cable				
2.12.2	The cable shall be 1080p/60 verified				
2.12.3	The cable shall of 30 AWG copper wire construction				
2.12.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				
2.12.5	The cable shall support Data rates to 10.2 Gbps				
2.12.6	The cable shall support Refresh rates to 120 Hz				
2.12.7	The cable shall support colour depth to 48 bits - 16 bits per colour				

2.12.8	The cable shall have Gold plated contacts				
2.13	**Supply of 3ft high resolution VGA cable of following specification , complete as required**				
2.13.1	3ft micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each end.				
2.13.2	The cable shall be Thin, flexible cable with low profile VGA connectors				
2.13.3	The audio cable shall be atleast 24 inches long one side and 8 inches long on the other side				
2.13.4	Pin 9 of the 15-pin HD male connector shall be passed through from end to end	Each	1.00		
2.13.5	The cable shall be capable of transmitting computer-video, ID bit signals, and audio				
2.13.6	VGA shell of the cable shall be grounded for ESD electrostatic discharge protection				
2.13.7	The cable shall features injection mold with overall foil shield for improved EMI electromagnetic interference isolation				
2.13.8	The cable shall be AWM 20276 rated				
2.14	**Supply of 6 ft High resolution VGA cable of following specifications, complete as required**	Each	1.00		
2.14.1	6ft micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each				

	end.				
2.14.2	The cable shall be Thin, flexible cable with low profile VGA connectors				
2.14.3	The audio cable shall be atleast 24 inches long one side and 8 inches long on the other side				
2.14.4	Pin 9 of the 15-pin HD male connector shall be passed through from end to end				
2.14.5	The cable shall be capable of transmitting computer-video, ID bit signals, and audio				
2.14.6	VGA shell of the cable shall be grounded for ESD electrostatic discharge protection				
2.14.7	The cable shall features injection mold with overall foil shield for improved EMI electromagnetic interference isolation				
2.14.8	The cable shall be AWM 20276 rated				
2.15	**Supply of 6 ft HDMI to DVI-D cable of following specification, complete as required**				
2.15.1	6ft Standard Speed HDMI to DVI-D cables				
2.15.2	The cable shall be 1080p/60 verified	Each	2.00		
2.15.3	The cable shall of 28 AWG copper wire construction				
2.15.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				
2.15.5	The cable shall support Data rates to 4.95				

	Gbps				
2.15.6	The cable shall support Refresh rates to 60 Hz				
2.15.7	The cable shall support colour depth to 24 bits - 8 bits per colour				
2.15.8	The cable shall have Gold plated contacts				
2.15.9	The cable shall be NEC CL2 rated				
	Audio System				
2.16	**Supply of wireless handheld microphone of following specifications , complete with all accessories as required.**	Each	2.00		
2.16.1	Wireless handheld Microphone system equipped with the automatic frequency setting function, has 16 pre-programmed UHF frequency settings and can be operated with up to 16 channels per frequency range				
2.16.2	Wireless handheld Microphone system should have true diversity receiver & handheld transmitter				
2.16.3	The receiver of wireless handheld system should be one-channel true diversity receiver				
2.16.4	The receiver should have adjustable squelch 2 µV - 1 mV so as to eliminate Interference by reducing the sensitivity of the channel affected by interference until only the main signal is being is received.				

2.16.5	The receiver should operate frequency range from 506 to 530 MHz, 668 to 692 MHz, 774 to 798 MHz, 790 to 814 MHz and 841 to 865 MHz & able to select one of 16 pre-programmed Frequencies within these ranges.				
2.16.6	The receiver should have Scan function to start an automatic search for interference-free frequencies				
2.16.7	The receiver should have ACT function (Automatic Channel Targeting) to transmit the automatic searched interference-free frequencies to the transmitter				
2.16.8	The receiver should have RF level indicator & AF level indicator				
2.16.9	The receiver should have On/off switch with power on LED				
2.16.10	The receiver should have Switching bandwidth of 24 MHz				
2.16.11	Nominal deviation of the receiver should be ± 40 kHz				
2.16.12	The receiver should have removable TNC antennae				
2.16.13	The Sensitivity of the receiver should be 2 µV				
2.16.14	Signal-to-noise ratio should be greater than 110 dB(A)				
2.16.15	T.H.D of receiver should be less than 0.5% at 1 kHz				
2.16.16	The modulation of handheld transmitter should be FM				

2.16.17	The handheld transmitter shall operate in the frequency range 506 - 530 MHz, 668 - 692 MHz, 774 - 798 MHz, 790 - 814 MHz or 841 - 865 MHz				
2.16.18	The handheld transmitter shall have Modular design with interchangeable microphone capsules				
2.16.19	The handheld transmitter shall have Integrated antenna				
2.16.20	The handheld transmitter shall have Plastic housing				
2.16.21	The handheld transmitter ACT function (Automatic Channel Targeting) for automatic frequency setting				
2.16.22	Max. SPL of the handheld transmitter should be 146 dB				
2.16.23	The Signal-to-noise ratio of the handheld transmitter should be greater than 110 dB				
2.16.24	The T.H.D of the handheld transmitter should be less than 0.5% at 1 kHz				
2.16.25	Radiated transmitter power of handheld transmitter shall be 10 mW				
2.16.26	AF transmission range should be 55 - 18,000 Hz at 80 dB SPL				
2.16.27	Transmission range of the handheld transmitter should be more than 90 m				
2.16.28	Operating time shall be atleast 20 hours with 2 no's AA alkaline Batteries				
2.16.29	Length of the handheld transmitter should be less than 200mm				

2.16.30	Shaft of the handheld transmitter should be less than 40 mm				
2.16.31	Weight of the handheld transmitter with batteries shall be less than 170g				
2.16.32	The receiver & the handheld transmitter should have On/off switch with power on LED				
2.16.33	Polar pattern of the microphone should be Hypercardioid				
2.16.34	Transducer type should be Dynamic				
2.16.35	Frequency response of the microphone should be 90 - 16,000 Hz				
2.16.36	Nominal impedance of the microphone should be 280 Ω				
2.16.37	Load impedance of the microphone should be 1 kΩ				
2.16.38	Open circuit voltage of the microphone should be 3 mV / Pa				
2.16.39	Magnetic field suppression of the microphone should be greater than 20 dB at 50 Hz Dimensions				
2.16.40	Head diameter of the microphone shall be less than 60 mm				
2.17	**Supply of clip on type microphone of following specification , complete with all accessories as required.**	Each	1.00		
2.17.1	Hypercardioid clip-on microphone designed for unobtrusive miking of speech and instruments				
2.17.2	Clip-on microphone should have wide range frequency response				

2.17.3	Microphone should be easily interfaces with the below wireless body pack transmitters				
2.17.4	The microphone should have Lavaliere or instrument mounting capabilities				
2.17.5	The microphone should be powered either by pocket transmitter or phantom power converter for wired use.				
2.17.6	The transduser type of the microphone should be electret condenser				
2.17.7	The microphone should have a frequency response of 40 - 20.000 Hz				
2.17.8	The Operating principle of the microphone should be Pressure gradient				
2.17.9	Max. SPL at 1 kHz for k = 1% should be 120 dB				
2.17.10	S/N ratio rel. to 1 PA should be 60 dB				
2.17.11	Open circuit voltage at 1 kHz should be 30 mV/Pa = -30 dBV				
2.17.12	Nominal impedance of the Microphone should be 200 ohms				
2.17.13	Load impedance of the Microphone should be 1 kΩ				
2.17.14	Length of the Microphone should be less than 25mm				
2.17.15	Weight of the Microphone should be less than 20g				
2.17.16	The connector of the Microphone should be 3 Pin XLR Male				
2.17.17	Should have accessories like XLR cable, clamp and storage bag along with				

	Microphone System				
2.18	**Supply of Wireless Lavaliere Microphone System of the following specifications, complete with all accessories as required.**	Each	1.00		
2.18.1	Wireless system equipped with the automatic frequency setting function, has 16 pre-programmed UHF frequency settings and can be operated with up to 16 channels per frequency range				
2.18.2	Wireless Microphone system should have true diversity receiver pocket transmitter & condenser lavaliere Microphone (Omni directional)				
2.18.3	The receiver of wireless system should be one-channel true diversity receiver				
2.18.4	The receiver should have adjustable squelch 2 µV - 1 mV so as to eliminate Interference by reducing the sensitivity of the channel affected by interference until only the main signal is being is received.				
2.18.5	The receiver should operate frequency range from 506 to 530 MHz, 668 to 692 MHz, 774 to 798 MHz, 790 to 814 MHz and 841 to 865 MHz & able to select one of 16 pre-programmed Frequencies within these ranges.				
2.18.6	The receiver should have Scan function to start an automatic search for interference-free frequencies				

2.18.7	The receiver should have ACT function (Automatic Channel Targeting) to transmit the automatic searched interference-free frequencies to the transmitter				
2.18.8	The receiver should have RF level indicator & AF level indicator				
2.18.9	The receiver should have On/off switch with power on LED				
2.18.10	The receiver should have Switching bandwidth of 24 MHz				
2.18.11	Nominal deviation of the receiver should be ± 40 kHz				
2.18.12	The receiver should have removable TNC antennae				
2.18.13	The Sensitivity of the receiver should be 2 µV				
2.18.14	Signal-to-noise ratio should be greater than 110 dB(A)				
2.18.15	T.H.D of receiver should be less than 0.5% at 1 kHz				
2.18.16	The belt pack transmitter should have ACT infra red interface for frequency transmitting from receiver to transmitter				
2.18.17	The belt pack transmitter should operates in the frequency range 668 to 692 MHz, 774 to 798 MHz, 790 to 814 MHz or 841 to 865 MHz.				
2.18.18	The belt pack transmitter should have adjustable gain control so as to adjust input sensitivity for various microphones or instruments				

2.18.19	The belt pack transmitter should have 4-pin mini XLR input connector (male) to connect microphones or instruments				
2.18.20	The belt pack transmitter should have GT/MT switch to select between microphone or instrument inputs				
2.18.21	The belt pack transmitter should have Swiveling clip to attach to belts, waistbands or guitar straps				
2.18.22	Operating time shall be atleast 20 hours with 2 no's AA alkaline Batteries				
2.18.23	The Modulation of the belt pack transmitter should be FM				
2.18.24	Nominal deviation of the belt pack transmitter should be ± 40 kHz				
2.18.25	Radiated transmitter power of the belt pack transmitter should be 20 mW				
2.18.26	Signal-to-noise ratio of the belt pack transmitter should be greater than 110 dB(A)				
2.18.27	T.H.D of belt pack transmitter should be less than 0.5% at 1 kHz				
2.18.28	Frequency response of the belt pack transmitter should be 50 Hz - 18,000 Hz				
2.18.29	Weight with batteries of the belt pack transmitter should be less than 150 g				
2.18.30	The lavaliere Microphone should have omnidirectional polar pattern				
2.18.31	The lavaliere Microphone should be battery or phantom powered				
2.18.32	Transducer type should be Condenser				

	(back electret)				
2.18.33	Operating principle of the lavaliere Microphone should be Pressure				
2.18.34	Frequency response of the lavaliere Microphone should be 25 - 20,000 Hz				
2.18.35	Open circuit voltage at 1 kHz of the lavaliere Microphone should be30 mV				
2.18.36	Nominal impedance of the lavaliere Microphone should be less than or equal to 200 ohms				
2.18.37	Load impedance of the lavaliere Microphone should be greater than or equal to 1 KΩ				
2.18.38	Max. SPL at 1 kHz of the lavaliere Microphone should be 120 dB				
2.18.39	S/N ratio rel. to 1 Pa of the lavaliere Microphone should be approx. 60 dB				
2.18.40	Length of the lavaliere Microphone should be less than 14 mm				
2.18.41	Head diameter of the lavaliere Microphone should be less than 8mm				
2.18.42	Weight of the lavaliere Microphone without cable should not exceed 2 grams				
2.19	**Supply of Digital Matrix Processor of following specifications, complete with all accessories as required.**	Each	1.00		
2.19.1	Digital matrix processor shall have six inputs, all with mic level capability and 48 volt phantom power that can be routed and mixed to four line level outputs.				

2.19.2	The inputs of the digital matrix processor shall be six balanced or unbalanced mic/line level on 3.5 mm, 3-pole captive screw connectors				
2.19.3	The output of the digital matrix processor Output shall be four balanced or unbalanced line level on 3.5 mm, 3-pole captive screw connectors				
2.19.4	Digital matrix processor shall features 32/64-bit floating point audio DSP processing to simplify management of gain staging while reducing the possibility of DSP signal clipping.				
2.19.5	The Digital matrix processor shall be equipped with selectable 48 volt phantom power for each input, allowing the use of condenser microphones.				
2.19.6	The Digital matrix processor shall have studio grade 24-bit/48 kHz analogue-to-digital and digital-to-analogue converters				
2.19.7	The input to output latency shall be constant 4.5 ms within the Digital matrix processor regardless of the number of active channels or processes.				
2.19.8	The Digital matrix processor shall be equipped with both primary and secondary RS-232 serial ports for divisible room applications.				
2.19.9	Six mono mic/line inputs of the digital matrix processor shall be matrixed mixed into any of the four output buses to create finely tuned audio zones for the corresponding outputs				

2.19.10	Six inputs of the digital matrix processor shall be routed to any of the four "virtual" buses to allow inputs to be processed together as a group, before routing back into the output buses				
2.19.11	The audio gain of the digital matrix processor shall be Unbalanced output: -6 dB; balanced output: 0 dB				
2.19.12	The Frequency response of the digital matrix processor shall be 20 Hz to 20 kHz, ±0.1 dB				
2.19.13	The THD + Noise of the digital matrix processor shall be less than 0.01% @ 1 kHz, at maximum output level				
2.19.14	The S/N of the digital matrix processor shall be greater than 105 dB, 20 Hz to 20 kHz, at maximum output, unweighted				
2.19.15	The Crosstalk of the digital matrix processor shall be less than 90 dB @ 1 kHz, fully loaded				
2.19.16	The Digital matrix processor shall have audio input impedance greater than 10 ohms unbalanced/balanced				
2.19.17	The Digital matrix processor shall have audio output impedance of 50 ohms unbalanced, 100 ohms balanced				
2.19.18	The Digital matrix processor shall perform digital audio signal processing function such as level control, dynamics, filters, delay, ducking, loudness, feedback suppression, and matrix mixing				

2.19.19	The Digital matrix processor shall provides LEDs on the front panel for each input and output, for real-time monitoring of signal presence				
2.19.20	The Digital matrix processor shall be controlled and configured via RS-232 serial control, Ethernet control, or USB.				
2.19.21	The Digital matrix processor shall have digital I/O ports for external triggering such as mic activation and muting				
2.20	**Supply of 2 channel amplifier- Type I of following specifications, complete with all accessories as required.**	Each	1.00		
2.20.1	Number of channels should be 2				
2.20.2	Should be capable of delivering similar power per channel at 70 V, 2, 4, 8 and 16 ohms				
2.20.3	Max total output all channels driven should not be less than 800 watts				
2.20.4	Peak output voltage per channel should be 100 V / 70 Vrms				
2.20.5	Max. output current per channel should be 16 Arms				
2.20.6	THD 20 Hz – 20 kHz for 1 W should be less than 0.1%				
2.20.7	THD at 1 kHz and 1 dB below clipping should be less than 0.05%				
2.20.8	Signal To Noise Ratio should be greater than112 dBA				

2.20.9	Channel separation (Crosstalk) at 1 kHz should be greater than 70 dB				
2.20.10	Frequency response of 2 Hz – 40 kHz				
2.20.11	Input impedance of 20 kOhm				
2.20.12	Common Mode Rejection (CMR) : 50 dB				
2.20.13	Output impedance of 25 mOhm				
2.20.14	Should have a feature of mixing and matching of loads with different impedances				
2.20.15	Should have RSL switch circuit for sensing rail voltage and optimizes output for instantaneous load conditions				
2.21	**Supply of wall mount speakers of following specifications, complete with all accessories as required.**				
2.21.1	Two-Way Surface Mount full range Speakers with a power rating of 60 watts continuous pink noise, 120 watts continuous program capacity				
2.21.2	The speaker shall have 6.5" (16.5 cm) long-throw woofer with dual tuned bass reflex ports and a 1" (2.5 cm) silk dome tweeter	Each	2.00		
2.21.3	The speaker provide a wide frequency range from 70 Hz to 18 kHz				
2.21.4	The speaker shall have integrated electrical contacts automatically mate with the pre-wired contacts on the mounting plate				

2.21.5	The nominal sensitivity of the speaker shall be 90 dB SPL, 1 W, 1 m, full space				
2.21.6	The nominal impedance of the speaker shall be 8 ohms				
2.21.7	The Crossover frequency of the speaker shall be 2.5 kHz				
2.21.8	0° mounting plate and 10° mounting adapter shall be provided along with the speaker				
2.21.9	The speaker shall have full range power limiter protecting the tweeter, woofer, and crossover from overload				
	Cables & Connectors				
2.22	**Supply of 17U Equipment Rack of following specifications, complete with all accessories as required**				
2.22.1	Equipment rack should be of 17U				
2.22.2	Rack should have 8 PORT 5 Amp Power Distribution Unit				
2.22.3	Rack should have Castor wheels with brake and without brake	Each	1.00		
2.22.4	Rack should have Cable manager				
2.22.5	Rack shall have shelves for placing non rack mountable equipment				
2.22.6	Rack should have Monitor Tray – Ventilation & Fan assembly				
2.22.7	Rack should also have Front and back doors				

2.23	**Supply & Laying of Speaker cable of following specifications, complete as required.**	Mtr	100.00		
2.23.1	Speaker cable for connecting speakers and amplifiers				
2.23.2	Cable shall have single colour-coded pair, 16 AWG bare copper conductors.				
2.23.3	Cable shall offers a higher conductor strand count than comparable cables in its class				
2.23.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
2.24	**Supply & Laying of Dual twisted pair Audio Cable of following specifications , complete as required.**	Mtr	100.00		
2.24.1	Audio Cables/Serial Control Cables for transmission and distribution of audio and control signals.				
2.24.2	Cable should have Dual 22 AWG shielded twisted pairs with individual drain wires				
2.24.3	Cable shall have tinned copper drain wire on the inside of the foil shield.				
2.24.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
2.25	**Supply & Laying of Shielded twisted pair cable of following specifications, complete as required**	Mtr	70.00		

2.25.1	24 AWG solid copper construction shielded twisted pair cable				
2.25.2	The cable shall be certified to 475 MHz bandwidth at distances up 100 meters and has been independently tested and verified to meet performance requirements set by the HDBaseT Alliance				
2.25.3	Cable shall provides added protection from outside interference and ensures high quality signal transmission				
2.25.4	Cable shall be Independently tested and verified to meet performance requirements set by HDBaseT Alliance				
2.25.5	Cable shall utilize SF/UTP design with with four unshielded 24 AWG twisted pair conductors inside an overall braid and foil shield				
2.25.6	Cable shall be non-plenum rated				
2	**Supply & Termination of RJ-45 plug of following specifications, complete with all accessories as required.**	Mtr	10.00		
2.26.1	Shielded RJ-45 plug for twisted pair cable				
2.26.2	RJ-45 plug shall have metal strain relief and ground bonding				
2.26.3	RJ-45 plug shall be ideal for high EMI/RFI environments				
2.26.4	RJ-45 plug shall have conductor alignment guide reduces crosstalk and signal interference				

2.26.5	RJ-45 plug shall have Gold plated contacts				
2.27	**Supply and Termination of Connectors of following specification, complete as required.** High quality branded XLR, AUDIO. RCA, Stereo connectors with Hood covers	Set	1.00		
	Total Amount for **LECTURE HALL- FIRST FLOOR**				

Sl No	Description of Item	Unit	Qty	Rate (in words and figures)	Amount (in words and figures)
3	Conference Hall- Ground Floor				
	Video & Display System				
3.1	**Supply of display unit with a minimum size of 55 inch of following specifications , complete with all accessories as required.**	Each	1.00		
3.1.1	The Screen size of display shall be 55 inch Diagonal or more				
3.1.2	The panel type shall be 60 Hz D-LED BLU Panel				
3.1.3	The Display Resolution shall be 1920 x 1080				
3.1.4	The Contrast Ratio Shall not be less than				

	5000:1				
3.1.5	The Response Time of Display shall not be more than 6 ms				
3.1.6	The Brightness of the display shall not be less than 350 nits				
3.1.7	The display shall have maximum pixel frequency of 148.5MHz				
3.1.8	The Display Colour shall be 16.7M				
3.1.9	The display shall have Pixel Pitch of 0.21 (H) x 0.63 (V)				
3.1.10	The Colour Gamut Shall not be less than 72%				
3.1.11	The Viewing angle of Display shall be 178°/178°				
3.1.12	The Display shall have atleast one HDMI input				
3.1.13	The Display shall have atleast one DVI-D, D-SUB & Component video Input terminals				
3.1.14	The Display shall have Stereo Mini jack Audio Output Terminal				
3.1.15	The Display Shall have Stereo Mini jack Audio Input Terminal				
3.1.16	The Device Shall have option of External Control Via RS232C(in/out) thru stereo jack, RJ45				
3.1.17	Bezel Width of the display shall not be more than 9.5 mm on Top and side & 15.0mm on the bottom				
3.1.18	The Display Shall have USB 2.0 input ports				
3.1.19	The operating system of the display shall be				

	LINUX				
3.1.20	The Display shall have 2x 10W built In speaker				
3.1.21	The Display shall have embedded media player				
3.1.22	The Display shall have SD Card Slot				
3.1.23	The Display shall have External Sensors for IR and Ambient Light				
3.1.24	The display shall be Energy star 6.0 certified				
3.1.25	The weight of the display shall be less than 16kg				
3.1.26	The thickness of display shall be less than 50mm				
3.2	**Supply of wall mount unit for display unit of following specifications, complete with all accessories as required.**	Each	1.00		
3.2.1	VESA Mount wall mount brackets compatible for above display				
3.2.2	The weight of the mount should be less than 3 Kg.				
3.2.3	Supplied with all the fastners, screws etc				
3.3	**Supply of presentation wall plate with suitable ports of following specifications, complete with all accessories as required.**	Each	1.00		
3.3.1	The wall Plate shall have at least one HDMI ,VGA and Stereo input				

3.3.2	The wall plate shall features a pass-through VGA female to VGA female on 6" pigtail, HDMI female adapter on 10" pigtail, and a 3.5 mm stereo mini jack to captive screw				
3.3.3	The wall plate shall be of one gang size				
3.3.4	The wall Plate shall be HDCP Compliant				
3.3.5	The HDMI & VGA input of the wall plate shall facilitate EDID communication and HDCP exchange between the display and source.				
3.3.6	The wall plate should be of metal construction				
3.4	**Supply of 3 ft HDMI cable of following specification complete as required.**				
3.4.1	3ft Ultra-flexible low bend radius HDMI cable				
3.4.2	The cable shall be 1080p/60 verified				
3.4.3	The cable shall of 36 AWG copper wire construction				
3.4.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60	Each	1.00		
3.4.5	The cable shall support Data rates to 10.2 Gbps				
3.4.6	The cable shall support Refresh rates to 120 Hz				
3.4.7	The cable shall support Color depth to 48 bits - 16 bits per colour				
3.4.8	The cable shall have Gold plated contacts				

3.5	**Supply of 3ft high resolution VGA cable of following specification , complete as required**				
3.5.1	3ft micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each end.				
3.5.2	The cable shall be Thin, flexible cable with low profile VGA connectors				
3.5.3	The audio cable shall be atleast 24 inches long one side and 8 inches long on the other side	Each	1.00		
3.5.4	Pin 9 of the 15-pin HD male connector shall be passed through from end to end				
3.5.5	The cable shall be capable of transmitting computer-video, ID bit signals, and audio				
3.5.6	VGA shell of the cable shall be grounded for ESD electrostatic discharge protection				
3.5.7	The cable shall features injection mold with overall foil shield for improved EMI electromagnetic interference isolation				
3.5.8	The cable shall be AWM 20276 rated				
3.6	**Supply of 35 ft HDMI cable of following specification, complete as required.**				
3.6.1	35ft standard speed HDMI cable				
3.6.2	The cable shall be 1080p/60 verified	Each	1.00		
3.6.3	The cable shall of 22 AWG copper wire construction				
3.6.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				

3.6.5	The cable shall support Data rates to 4.95 Gbps				
3.6.6	The cable shall support Refresh rates to 60 Hz				
3.6.7	The cable shall support colour depth to 24 bits – 8 bits per colour				
3.6.8	The cable shall have Gold plated contacts				
3.6.9	The cable shall be NEC CM Rated				
	Cables & Connectors				
3.7	**Supply & Laying of VGA Cable of following specifications, complete as required.**	Each	15.00		
3.7.1	Cable shall carries red, green, blue, and separate horizontal and vertical sync on five conductors				
3.7.2	Cable shall include five 26 AWG, 75 ohm coaxial conductors in a single jacket				
3.7.3	Each conductor shall be individually double-shielded with foil and tinned copper to reduce interference.				
3.7.4	The cable shall be sweep tested from 5 MHz to 1 GHz				
3.7.5	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
3.7.6	Nominal impedance of the cable shall be 75ohms				
3.8	**Supply & Laying of Dual twisted pair Audio Cable of following specifications , complete as required.**	Mtr	10.00		

3.8.1	Audio Cables/Serial Control Cables for transmission and distribution of audio and control signals.				
3.8.2	Cable should have Dual 22 AWG shielded twisted pairs with individual drain wires				
3.8.3	Cable shall have tinned copper drain wire on the inside of the foil shield.				
3.8.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
3.9	**Supply and Termination of Connectors of following specification, complete as required.**	Set	1.00		
	High quality branded XLR, AUDIO. RCA, Stereo connectors with Hood covers				
	Total amount forConference Hall- Ground Floor				

Sl No	**Description of Item**	**Unit**	**Qty**	**Rate (in words and figures)**	**Amount (in words and figures)**
4	Conference Hall - First Floor				

	Video & Display System				
4.1	**Supply of display unit with a minimum size of 55 inch of following specifications , complete with all accessories as required.**	Each	1.00		
4.1.1	The Screen size of display shall be 55 inch Diagonal or more				
4.1.2	The panel type shall be 60 Hz D-LED BLU Panel				
4.1.3	The Display Resolution shall be 1920 x 1080				
4.1.4	The Contrast Ratio Shall not be less than 5000:1				
4.1.5	The Response Time of Display shall not be more than 6 ms				
4.1.6	The Brightness of the display shall not be less than 350 nits				
4.1.7	The display shall have maximum pixel frequency of 148.5MHz				
4.1.8	The Display Colour shall be 16.7M				
4.1.9	The display shall have Pixel Pitch of 0.21 (H) x 0.63 (V)				
4.1.10	The Colour Gamut Shall not be less than 72%				
4.1.11	The Viewing angle of Display shall be 178°/178°				
4.1.12	The Display shall have atleast one HDMI input				
4.1.13	The Display shall have atleast one DVI-D, D-SUB & Component video Input terminals				
4.1.14	The Display shall have Stereo Mini jack				

	Audio Output Terminal				
4.1.15	The Display Shall have Stereo Mini jack Audio Input Terminal				
4.1.16	The Device Shall have option of External Control Via RS232C(in/out) thru stereo jack, RJ45				
4.1.17	Bezel Width of the display shall not be more than 9.5 mm on Top and side & 15.0mm on the bottom				
4.1.18	The Display Shall have USB 2.0 input ports				
4.1.19	The operating system of the display shall be LINUX				
4.1.20	The Display shall have 2x 10W built In speaker				
4.1.21	The Display shall have embedded media player				
4.1.22	The Display shall have SD Card Slot				
4.1.23	The Display shall have External Sensors for IR and Ambient Light				
4.1.24	The display shall be Energy star 6.0 certified				
4.1.25	The weight of the display shall be less than 16kg				
4.1.26	The thickness of display shall be less than 50mm				
4.2	**Supply of wall mount unit for display unit of following specifications, complete with all accessories as required.**	Each	1.00		
4.2.1	VESA Mount wall mount brackets				

	compatible for above display				
4.2.2	The weight of the mount should be less than 3 Kg.				
4.2.3	Supplied with all the fastners, screws etc				
4.3	**Supply of presentation wall plate with suitable ports of following specifications, complete with all accessories as required.**	Each	1.00		
4.3.1	The wall Plate shall have at least one HDMI ,VGA and Stereo input				
4.3.2	The wall plate shall features a pass-through VGA female to VGA female on 6" pigtail, HDMI female adapter on 10" pigtail, and a 3.5 mm stereo mini jack to captive screw				
4.3.3	The wall plate shall be of one gang size				
4.3.4	The wall Plate shall be HDCP Compliant				
4.3.5	The HDMI & VGA input of the wall plate shall facilitate EDID communication and HDCP exchange between the display and source.				
4.3.6	The wall plate should be of metal construction				
4.4	**Supply of 3 ft HDMI cable of following specification complete as required.**	Each	1.00		
4.4.1	3ft Ultra-flexible low bend radius HDMI cable				
4.4.2	The cable shall be 1080p/60 verified				
4.4.3	The cable shall of 36 AWG copper wire				

	construction				
4.4.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				
4.4.5	The cable shall support Data rates to 10.2 Gbps				
4.4.6	The cable shall support Refresh rates to 120 Hz				
4.4.7	The cable shall support Color depth to 48 bits - 16 bits per colour				
4.4.8	The cable shall have Gold plated contacts				
4.5	**Supply of 3ft high resolution VGA cable of following specification , complete as required**				
4.5.1	3ft micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each end.				
4.5.2	The cable shall be Thin, flexible cable with low profile VGA connectors				
4.5.3	The audio cable shall be atleast 24 inches long one side and 8 inches long on the other side	Each	1.00		
4.5.4	Pin 9 of the 15-pin HD male connector shall be passed through from end to end				
4.5.5	The cable shall be capable of transmitting computer-video, ID bit signals, and audio				
4.5.6	VGA shell of the cable shall be grounded for ESD electrostatic discharge protection				
4.5.7	The cable shall features injection mold with overall foil shield for improved EMI electromagnetic interference isolation				

4.5.8	The cable shall be AWM 20276 rated				
4.6	**Supply of 35 ft HDMI cable of following specification, complete as required.**	Each	1.00		
4.6.1	35ft standard speed HDMI cable				
4.6.2	The cable shall be 1080p/60 verified				
4.6.3	The cable shall of 22 AWG copper wire construction				
4.6.4	The cable shall supports signals up to 1920x1200 @ 60 Hz and 1080p/60				
4.6.5	The cable shall support Data rates to 4.95 Gbps				
4.6.6	The cable shall support Refresh rates to 60 Hz				
4.6.7	The cable shall support colour depth to 24 bits – 8 bits per colour				
4.6.8	The cable shall have Gold plated contacts				
4.6.9	The cable shall be NEC CM Rated				
	Cables & Connectors				
4.7	**Supply & Laying of VGA Cable of following specifications, complete as required.**	Each	15.00		
4.7.1	Cable shall carries red, green, blue, and separate horizontal and vertical sync on five conductors				
4.7.2	Cable shall include five 26 AWG, 75 ohm coaxial conductors in a single jacket				

4.7.3	Each conductor shall be individually double-shielded with foil and tinned copper to reduce interference.				
4.7.4	The cable shall be sweep tested from 5 MHz to 1 GHz				
4.7.5	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
4.7.6	Nominal impedance of the cable shall be 75ohms				
4.8	**Supply & Laying of Dual twisted pair Audio Cable of following specifications , complete as required.**	Mtr	10.00		
4.8.1	Audio Cables/Serial Control Cables for transmission and distribution of audio and control signals.				
4.8.2	Cable should have Dual 22 AWG shielded twisted pairs with individual drain wires				
4.8.3	Cable shall have tinned copper drain wire on the inside of the foil shield.				
4.8.4	Cable shall have NEC CM non-plenum Super Flex jacket with sequential numbering				
4.9	**Supply and Termination of Connectors of following specification, complete as required.**	Set	1.00		
	High quality branded XLR, AUDIO. RCA, Stereo connectors with Hood covers				
	Total amount for Conference Hall - First Floor.				
	Grand total for supply of Audio Video system at Library block of Kozhikode Medical college.				

PRICE SCHEDULE FOR INSTALLATION, PROGRAMMING, TESTING & COMMISSIONING OF AUDIO VIDEO SYSTEM AT LIBRARY BLOCK OF KOZHIKODE MEDICAL COLLEGE

Sl No	Description of Item	Rate (in words and figures)	Amount (in words and figures)
1	Installation, Programming,Testing & Commissioning of Audio Video System at library block of Kozhikode Medical college.		
	Total for Installation, Programming, Testing & Commissioning		