TECHNICAL SPECIFICATIONS

1. Professional audio mixing console (audio mixer)

Parameter	Specification
Input Channels	Minimum 20 input channels
Mono Channels	At least 12 mono mic/line channels
Stereo Channels	At least 4 stereo channels
Microphone Inputs	Minimum 16 microphone inputs
Phantom Power	+48V available on each mic input
High-Pass Filter	Approximately 80 Hz on each mic input
Stereo Outputs	Minimum 2 stereo outputs
Monitor Output	Minimum 1 monitor output
Auxiliary Sends	Minimum 4 auxiliary sends
Group Outputs	Minimum 4 group outputs
Headphone Output	Minimum 1 headphone output
Stereo Bus	Minimum 1 stereo bus
Group Buses	Minimum 4 group buses
Auxiliary Buses	Minimum 4 auxiliary buses including effects
Frequency Response	20 Hz – 48 kHz or better
Total Harmonic Distortion	≤ 0.03%
Equivalent Input Noise	≤ -128 dBu
Crosstalk	≤ -75 dB at 1 kHz
Microphone Preamplifier	High-quality low-noise preamps
Compressor	Built-in on mono channels
Channel Equalizer	3-band EQ (High, Mid, Low)
Input Pad	≥ 26 dB
High-Pass Filter (Channel)	Approximately 80 Hz
Digital Effects Processor	Built-in processor available
Preset Effects	Minimum 20 presets including reverb, delay, chorus, flanger, echo
USB Interface	Integrated USB audio interface
USB Channels	Minimum 2-in / 2-out
Resolution	24-bit
Sampling Rate	Up to 192 kHz
USB Compliance	USB Audio Class compliant
Connectors	Balanced XLR/TRS inputs and outputs
Stereo Inputs	RCA / Line input support
USB Port	Standard USB interface
Level Metering	Multi-segment LED meters
Peak Indicators	Available
Output Monitoring	Master output monitoring available
Power Supply	100–240V AC, 50/60 Hz
Power Type	Internal power supply
Power Consumption	≤ 50W
Chassis	Robust metal construction
Mounting	Rack mountable with kit

Application	Suitable for professional installations
Operating Temperature	0°C to 40°C
Accessories	Power cord, rack mounting kit, user manual
Software Compatibility	Compatible with standard DAW software
Recording Support	Recording and playback supported

2. Detailed Technical Specifications – Powered Studio Monitor Speakers

Parameter	Specification
Scope	Supply, installation, testing, and commissioning of powered near-field studio monitor speakers suitable for broadcast studios, audio editing suites, and professional monitoring applications
Speaker Type	Bi-amplified powered studio monitor
Application	Suitable for near-field monitoring applications
Usage Environment	Designed for broadcast, recording, and post-production environments
Form Factor	Compact design suitable for studio installation
Speaker Configuration	2-way speaker system
Enclosure Type	Bass-reflex type enclosure
Low Frequency Driver	Approximately 5-inch cone woofer
High Frequency Driver	Approximately 1-inch dome tweeter
Amplification Type	Built-in bi-amplified system
Total Output Power	≥ 70 Watts
LF Amplifier Power	Approximately 45 W
HF Amplifier Power	Approximately 25 W
Cooling Method	Efficient cooling through natural convection or equivalent
Frequency Response	50 Hz – 30 kHz or better
Crossover Frequency	Approximately 2 kHz
Audio Response	Flat and accurate response suitable for monitoring
Level Control	Available
High Frequency Adjustment	HF trim control available
Low Frequency Adjustment	Room control/bass attenuation available
Input Connectors	Balanced XLR input and TRS (phone jack) input
Signal Support	Supports balanced and unbalanced signals
Enclosure Material	MDF or equivalent acoustic-grade material
Port Design	Bass-reflex port design
Finish	Durable studio-grade finish
Cabinet Design	Compact and stable construction
Mounting Provision	Provision for wall or ceiling mounting (preferred)
Installation Support	Mounting points for fixed installations if applicable
Power Supply	AC input suitable for Indian conditions (230V, 50 Hz or universal)
Power Consumption	≤ 50W per unit
Size	Compact size suitable for studio desks
Weight	Approximately ≤ 6 kg per speaker

3. Detailed Technical Specifications – Professional Headphones

Parameter	Specification
Headphone Type	Over-ear (circumaural) type
Application	Suitable for broadcast, studio, and field monitoring use
Comfort	Lightweight and comfortable for long-duration usage
Construction	Rugged construction for professional environments
Frequency Response	20 Hz – 20 kHz or better
Dynamic Range	High dynamic range for accurate monitoring
Audio Quality	High-resolution audio reproduction
Sensitivity	≥ 100 dB at 1 kHz
Impedance	Approximately 32 Ohms (± tolerance)
Maximum Input Power	≥ 100 mW
Ear Cup Design	Over-ear design with oval ear cups
Headband	Adjustable headband
Ear Cushions	Comfortable cushions for prolonged usage
Cable Type	Single-sided cable preferred
Connector Type	3.5 mm (1/8") stereo jack
Adapter	6.35 mm (1/4") adapter provided
Cable Length	Minimum 2 meters
Build Quality	High-quality components ensuring durability
Durability	Robust and impact-resistant construction
Usage Suitability	Suitable for regular professional use
Accessories	6.35 mm adapter and user documentation
Standards Compliance	Complies with relevant international audio standards
Safety Compliance	Electrical and safety compliance required

4. Detailed Technical Specifications – Professional Monitoring Headphones

Parameter	Specification
Scope	Supply of professional over-ear monitoring headphones suitable for studio recording, mixing, broadcasting, editing, and DJ monitoring applications
Headphone Type	Circumaural (over-ear) closed-back type
Design Purpose	Designed for accurate audio monitoring
Application	Suitable for studio, broadcast, and field use
Comfort	Comfortable for extended usage
Frequency Response	15 Hz – 24 kHz or better
Sensitivity	≥ 95 dB
Impedance	Approximately 30–40 Ohms
Audio Response	Flat and accurate sound reproduction across full frequency range
Noise Isolation	High isolation from external noise
Driver Size	≥ 40 mm dynamic drivers
Magnet System	High-quality magnet system such as neodymium or equivalent
Voice Coil	High-efficiency type such as copper-clad aluminum or equivalent
Maximum Input Power	≥ 1000 mW
Ear Design	Over-ear design for sound isolation
Headband	Adjustable headband
Ear Cushions	Soft and durable ear cushions
Weight	Lightweight design approximately ≤ 300 grams
Ear Cup Movement	Swiveling ear cups with minimum 90° rotation for one-ear monitoring
Cable Type	Detachable cable system preferred
Coiled Cable	Approximately 1.2–3 meters
Straight Cable	Approximately 3 meters
Connector	3.5 mm stereo jack
Adapter	6.35 mm adapter provided
Construction	Robust construction for professional use
Materials	Durable headband and ear pad materials
Replaceability	Replaceable parts preferred
Accessories	Detachable cables (minimum two types), 6.35 mm adapter, carry pouch or case
Frequency Tuning	Flat frequency tuning for accurate monitoring
Studio Use	Suitable for studio tracking and mixing
Broadcast Use	Suitable for broadcast monitoring
DJ Use	Suitable for DJ applications

5. Detailed Technical Specifications – Wireless Video Transmission System

Parameter	**Specification**
Scope	Supply, installation, testing, and commissioning of a professional wireless video transmission system consisting of transmitter and receiver units suitable for broadcast, film production, ENG/EFP, and live event applications
System Function	Supports real-time wireless video transmission
Monitoring Capability	Capable of multi-user monitoring
Design	Lightweight and rugged for field use
Application Environment	Suitable for indoor and outdoor broadcast environments
System Configuration	Minimum one transmitter and support for up to four receivers simultaneously
Operation	Plug-and-play operation preferred
Transmission Range	≥ 400 meters line-of-sight
Latency	≤ 50 ms
Signal Reliability	Reliable transmission with minimal interference
Signal Stability	Stable performance in dynamic environments
Frequency Bands	Dual-band operation in 2.4 GHz and 5 GHz
Frequency Management	Automatic frequency hopping or switching
Interference Control	Adaptive transmission for interference avoidance
Video Resolution	Supports HD formats including 720p, 1080i, 1080p
4K Support	Supports 4K UHD up to 30 fps
Format Compatibility	Compatible with broadcast-standard video formats
Transmitter Input	HDMI input minimum HDMI 1.4 or higher
Transmitter SDI Input	Minimum 3G-SDI
Receiver Output HDMI	HDMI output available
Receiver Output SDI	SDI output available
USB Interface	USB-C interface for data or streaming preferred
Streaming Support	Supports USB Video Class (UVC) and RTMP streaming
Battery Operation	Voltage range approximately 6.8V to 8.4V
DC Input	Supports DC input range of 6V to 16V
Power Consumption TX	≤ 12W
Power Consumption RX	≤ 10W
Transmit Power	≤ 23 dBm
Receiver Sensitivity	≤ -80 dBm or better
Bandwidth	20 MHz or higher in broadcast mode
Design Form Factor	Compact and lightweight design
Weight	≤ 250 grams per unit
Construction	Rugged body with metal or equivalent durable material
Mounting	Suitable for camera mounting
Antenna Type	External antennas with SMA connectors
Signal Performance	Stable signal reception and transmission
Operating Temperature	-10°C to +45°C
Storage Temperature	-40°C to +60°C
Accessories	Transmitter unit, receiver unit(s), antennas, power adapters or cables, mounting accessories

6. Detailed Technical Specifications – Shotgun Microphone with Windshield

Parameter	Specification
Scope	Supply, installation, and commissioning of professional shotgun condenser microphone system with compatible windshield suitable for broadcast, ENG, and video production applications
Microphone Type	Shotgun type condenser microphone
Application	Suitable for broadcast, video journalism, and indoor and outdoor recording
Design Purpose	Designed for high directivity and noise rejection
System Components	Includes microphone, shock mount, foam windshield, and professional fur windshield
Pickup Pattern	Super-cardioid or lobar (shotgun type)
Directivity	High directivity for focused audio capture
Noise Rejection	Effective rejection of off-axis and ambient noise
Frequency Response	40 Hz – 20 kHz or better
Equivalent Noise Level	≤ 16 dB(A)
Sensitivity	≥ 19 mV/Pa
Maximum SPL	≥ 125 dB SPL
Low-Cut Filter	Switchable high-pass filter attenuating frequencies below approximately 100 Hz
Speech Clarity	High speech intelligibility
Handling Noise	Low handling and structure-borne noise
Powering Options	Supports 48V phantom power and internal AA battery
Battery Life	≥ 100 hours of operation
Battery Indicator	Low battery indication via LED
Output Connector	3-pin XLR connector
Compatibility	Compatible with professional audio equipment and cameras
Construction	Rugged all-metal housing
Design	Compact and lightweight suitable for field and studio use
Weather Resistance	Weather-resistant design preferred
Foam Windshield	Reduces wind noise by approximately 20–25 dB for indoor or light outdoor use
Fur Windshield	Professional outdoor windshield designed for high wind conditions
Windshield Features	Lightweight and weather-resistant
Shock Mount	Provides vibration isolation
Mounting	Camera shoe mount or stand adapter provided
Carrying	Carry case for transport
Length	Approximately 250–300 mm
Diameter	Approximately 20–25 mm
Weight	≤ 200 grams without battery
Operating Temperature	-10°C to +60°C
Accessories	Shock mount, foam windshield, fur windshield, and carry case

7. Detailed Technical Specifications – Shotgun Microphone with Windshield

Parameter	Specification
Scope	Supply, installation, and commissioning of professional shotgun condenser microphone system with compatible windshield suitable for broadcast, ENG, and video production applications
Microphone Type	Shotgun type condenser microphone
Application	Suitable for broadcast, video journalism, and indoor and outdoor recording
Design Purpose	Designed for high directivity and noise rejection
System Components	Includes microphone, shock mount, foam windshield, and professional fur windshield
Pickup Pattern	Super-cardioid or lobar (shotgun type)
Directivity	High directivity for focused audio capture
Noise Rejection	Effective rejection of off-axis and ambient noise
Frequency Response	40 Hz – 20 kHz or better
Equivalent Noise Level	≤ 16 dB(A)
Sensitivity	≥ 19 mV/Pa
Maximum SPL	≥ 125 dB SPL
Low-Cut Filter	Switchable high-pass filter attenuating frequencies below approximately 100 Hz
Speech Clarity	High speech intelligibility
Handling Noise	Low handling and structure-borne noise
Powering Options	Supports 48V phantom power and internal AA battery
Battery Life	≥ 100 hours of operation
Battery Indicator	Low battery indication via LED
Output Connector	3-pin XLR connector
Compatibility	Compatible with professional audio equipment and cameras
Construction	Rugged all-metal housing
Design	Compact and lightweight suitable for field and studio use
Weather Resistance	Weather-resistant design preferred
Foam Windshield	Reduces wind noise by approximately 20–25 dB for indoor or light outdoor use
Fur Windshield	Professional outdoor windshield designed for high wind conditions
Windshield Features	Lightweight and weather-resistant
Shock Mount	Provides vibration isolation
Mounting	Camera shoe mount or stand adapter provided
Carrying	Carry case for transport
Length	Approximately 250–300 mm
Diameter	Approximately 20–25 mm
Weight	≤ 200 grams without battery
Operating Temperature	-10°C to +60°C
Accessories	Shock mount, foam windshield, fur windshield, and carry case

8. **Detailed Technical Specifications – AA Alkaline Battery**

Parameter	Specification
Scope	Supply of AA size alkaline batteries suitable for professional audio equipment, wireless systems, microphones, remote devices, and broadcast accessories
Battery Type	Alkaline-Manganese Dioxide (Zn/MnO_2)
Standard Size	AA (LR6)
Application	Suitable for professional and broadcast-grade electronic equipment
Performance	Long-lasting and reliable under continuous usage
Nominal Voltage	1.5 Volts
Internal Impedance	Approximately ≤ 100 mΩ at 1 kHz
Voltage Stability	Stable output under varying load conditions
Discharge Characteristics	Consistent discharge performance
IEC Designation	LR6 (AA size)
Weight	≤ 25 grams
Design	Cylindrical compact construction
Terminals	Flat positive and negative terminals
Energy Density	High energy density for extended operation
Load Performance	Reliable under low and high drain conditions
Discharge Profile	Consistent discharge profile across varying loads
Usage Suitability	Suitable for continuous and intermittent usage
Operating Temperature	-20°C to +50°C or better
Storage Temperature	5°C to 30°C
Construction	Leak-resistant construction
Safety	Safe for use in sensitive electronic equipment
Environmental Aspect	Environment-friendly design preferred
Shelf Life	Minimum 3 to 5 years
Self-Discharge	Low self-discharge rate
Packaging Type	Individually packed or blister packaging
Labeling	Includes manufacturing date, expiry date, and batch number

9. GENERAL TECHNICAL SPECIFICATIONS – 9V ALKALINE BATTERY

Parameter	Specification
Scope	Supply of 9V alkaline batteries suitable for professional audio equipment, microphones, wireless systems, and broadcast or studio electronic devices
Battery Type	Alkaline-Manganese Dioxide (Zn/MnO_2)
Standard Size	9V block battery
Application	Suitable for professional electronic and audio equipment
Performance	Long shelf life and reliable performance
Nominal Voltage	9 Volts
Internal Impedance	Approximately ≤ 1700 mΩ at 1 kHz
Voltage Stability	Stable output under varying load conditions
Discharge Characteristics	Consistent discharge performance
IEC Designation	6LR61 (9V type)
Weight	Approximately ≤ 50 grams
Design	Compact rectangular construction
Terminals	Miniature snap connector
Energy Density	High energy density for extended usage
Load Performance	Reliable under varying load conditions
Discharge Curve	Consistent discharge suitable for electronic devices
Operational Life	Long operational life depending on load conditions
Operating Temperature	-20°C to +50°C or better
Storage Temperature	5°C to 30°C
Construction	Leak-resistant construction
Safety	Safe for use in professional electronic equipment
Compliance	Compliant with environmental and safety norms
Shelf Life	Minimum 3 to 5 years preferred
Self-Discharge	Low self-discharge rate
Packaging Type	Individually sealed or blister packed
Labeling	Includes manufacturing date, expiry date, and batch number

UN PRICED BOM						
DETAILS OF THE OFFERED PRODUCT (TO BE FURNISHED BY THE FIRM MANDATORILY ALONG REQUIRSITE DOCUMENTS)						
Name of the Firm:						
Contact No.						
Firm Official email ID:						
GEM BID NO.& DATE						
Sl.no.	**PRODUCT DETAILS**	**Qty.**	**HSN Code**	**OFFERED PRODUCT MAKE**	**MODEL**	**REMARKS**
1	Professional audio mixing console (audio mixer)	01 No.s				
2	Powered Studio Monitor Speakers	2 No.s				
3	Professional Headphones	3 No.s				
4	Professional Monitoring Headphones	3 No.s				
5	Wireless Video Transmission System	4 sets				
6	Shotgun Microphone with Windshield	1 No.s				
7	AA Alkaline Batteries	400 No.s				
8	9VAlkaline Batteries	100 No.s				
The firm shall submit detailed technical spec/Catalogue of the offered product with images.						
The firm shall duly sign on this document before submission.						

Note:Bidders are instructed to strictly comply with the Technical specification given with the Bid document for all the procuremment material and shall Quote rates accordingly.