

GOVERNMENT OF BIHAR  
DEPARTMENT OF SCIENCE & TECHNOLOGY  
BIHAR COUNCIL ON SCIENCE & TECHNOLOGY  
INDIRA GANDHI SCIENCE COMPLEX - PLANETARIUM,  
PATNA – 800001

**TENDER NOTICE- 01/2017**

**For Creation of High Quality Audio Video Solution in the Auditorium at  
Indira Gandhi Science Complex, Patna, Bihar**

Sealed tenders are invited for Creation of High Quality Audio Video Solution in the Auditorium at Indira Gandhi Science Complex. All the devices listed should work as an integrated system with the main item, strictly as per terms & conditions. Details descriptions of the item and instructions for submitting your offer can be procured from the office of The Project Director, BCST, Bailey Road, Patna, on cost of Rs.1,000.00 non refundable or can be downloaded from the website of the department :- [http://dst.bih.nic.in /www.bcst.org.in](http://dst.bih.nic.in/www.bcst.org.in).

In case the tenderer is using downloaded copy of the tender, the bid must accompanied by tender fee of Rs.1,000.00 (Rupees One Thousand only) in the form of Demand Draft/Banker's Cheque, drawn on a Nationalized bank in favour of "I.G.S.C. Planetarium" payable at Patna.

Interested Bidders may submit their sealed offers to The Project Director, BCST, Patna up to 03:30 PM on 12-05-2017.

The Project Director, BCST, Patna reserves the right to accept or reject any or all proposals without incurring any obligation to inform the affected bidders of the grounds.

**Sd/-**

Project Director  
Bihar Council On Science & Technology,  
I.G.S.C.Planetarium , Patna.

## SECTION I

Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Patna invites tender from reputed Original Equipment Manufacturers/ Authorized Dealers / Bidders for Supply ,Installation & Commissioning of Audio Visual equipments and capable to undertake necessary civil / carpentry / fabrication works for Auditorium at I.G.S.C. Planetarium, Patna by replacing the existing as per table below:

### SCHEDULE FOR TENDER NOTICE NO. :-

Scope of Work	<p>Supply ,Installation &amp; Commissioning of Audio Visual equipments for Auditorium at I.G.S.C. Planetarium, Patna All required Civil / Carpentry works relating to the installation of the equipments, acoustic paneling, scaffolding for installation of equipments, fabrication/installation of base steel structure for mounting of projectors / Interactive motorized screen are to be taken up by the selected bidder. All necessary materials, machines and any other machine tools required for the fabrication and installation are to be arranged by the selected bidder at their own cost. The selected bidder will provide design, drawings, details and complete specifications for acoustic treatment/ / paneling and steel structure for installation of projectors / Interactive motorized screen as described earlier.</p> <p>I.G.S.C. Planetarium shall provide power for installation and minor fabrication works at site.</p> <p>All safety precautions and compliance of statutory obligations shall be taken care of by the selected bidder during execution of the entire project at site.</p>
Estimated Cost of work	Rs. 40.00 Lakh (Forty Lakhs Only)
Time Schedule of work	03 Months ( Three Months)
Earnest Money Deposit (E.M.D.)	Rs. 2.00 Lakh (Rupees Two Lakh Only)
Cost of Tender Document	Rs. 1,000.00 ( Rupees One Thousand Only)
Last Date of Tender submission	12-05-2017 up to 03:30 P.M.
Contact	0612- 2235264 (P) 0612-2230432 (FAX)
Email:	<a href="mailto:pd@bcst.org.in">pd@bcst.org.in</a>

Detailed descriptions of the item and instructions for submitting the bid can be downloaded from website (<https://www.dst.nic.in/> [www.bcst.org.in](http://www.bcst.org.in))

- The department/BCST/Tendering Authority doesn't take any responsibility for the delay / Non Submission of Tender / Non Reconciliation of Payment caused due to Non availability of Internet Connection, Network, Traffic / Holidays or any other reason."
- The bidders shall submit their eligibility and qualification details, Financial Bid, certificates as mentioned in formats given in the tender document only.
- The bidders shall submit copies of all the relevant certificates, documents etc., in support of their eligibility criteria / technical bids and other certificate /documents.
- The bidder shall sign each & every page on the supporting statements, documents, certificates, submitted by him, owning responsibility for their correctness/authenticity. The bidder shall attach all the required documents for the specific equipments during the bid submission as per the tender notice and bid document.
- For Support / Informations related to required works at auditorium of I.G.S. C. Planetarium, Patna, bidders may contact at following address Office of the Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Patna at their own cost.

## SECTION II

### BID DOCUMENT

1. The provisions in the Instructions to Bidders and in the General Conditions of contract (GCC) are based on the provisions of Bihar Financial Rules for Procurement of Goods.
2. All bids must be accompanied by a bid security as specified in the bid document and must be submitted as per details mentioned in the tender document
3. Bids will be opened before the Tender Evaluation Committee at office chamber of the Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Bailey Road, Patna.
4. In the event of the date specified for bid receipt and opening being declared as a closed holiday for purchaser's office, the due date for submission of bids and opening of bids will be the following working day at the appointed times.

#### 1) Eligibility Criteria

- a. The bidder shall be a registered legal entity in India. (submit the registration certificate & Memorandum of Understanding)
- b. The ISO/ ISI certified firms/equipment may be preferred, however the firm should enclose valid ISO / ISI certificate.
- c. The bidder should have average annual sales turnover of 02 Crore or above in the last three financial years 2013-14, 2014-15 and 2015-2016. and shall have positive net worth as on 31.3.2016 (Submit CA certificates as a proof for turnover and net worth.)
- d. The Bidder shall provide self declaration certification for non-engagement in fraudulent corrupt practices, non blacklisting in any Govt /PSU in last three financial year.
- e. The bidder should have supplied similar Audio Visual equipments to Government organisations in the last 3 financial years of value more 2 crore. (Submit self attested copies of purchase orders and satisfactory completion certificate by the respective Govt. organisation)
- f. Bidder shall be Original Equipment Manufacturer or their authorized distributor/dealer for the equipments proposed by the bidders.(Submit Certificate of OEM or authorization certificate by the respective OEMs of the equipments)

g. Bidders are required to submit all relevant documents for Pre-qualification criteria. Bidders are responsible to submit model make and manufacturer's authorization certificate from OEM regarding the equipments..

## **A. Cost of Bidding**

The Bidder shall bear all costs associated with the preparation and submission of its bid, and The Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Patna hereinafter referred to as "**The Purchaser**", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## **B. The Bidding Documents**

### **1. Content of Bidding Documents**

- I. The goods required, bidding procedures and contract terms are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents include:
  - (a) Instruction to Bidders (ITB) ;
  - (b) General Conditions of Contract (GCC) ;
  - (c) Special Conditions of Contract (SCC) ;
  - (d) Schedule of Requirements;
  - (e) Technical Specifications & Compliance;
  - (f) Bid Form and Price Schedules;
  - (g) Bid Security Form;
  - (h) Contract Form;
  - (i) Performance Security Form;
  - (j) Performance Statement Form;
  - (k) Manufacturer's Authorization Form;
  
- II. The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

### **2. Clarification of Bidding Documents**

A Prospective Bidder requiring any clarification of the bidding documents may notify the Purchaser in writing or by e-mail the Purchaser's mailing address indicated in the Invitation for Bids. The Purchaser will respond in writing to any request for clarification of the bidding documents which it receives no later than 7 days prior to the deadline for submission of bids prescribed by the Purchaser. Written copies of the Purchaser's response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective bidders which have received the bidding documents.

### **3. Amendment of Bidding Documents**

- I. At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.
- II. All prospective bidders who have received the bidding documents will be notified of the amendment through web portal of BCST and by email, and will be binding on them.
- III. In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

### **C. Preparation of Bids**

#### **4. Language of Bid**

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Bid, the translation shall govern.

#### **5. Instructions to the bidders**

The tender is a two-bid system. Bids will have to be submitted in TWO PARTS i.e. (a) Technical Bid and (b) Financial Bid as envisaged in the tender document

In the part relating to Technical Bid, the OEM/Vendor must provide the followings:-

1. Audio Visual Solution equipments for which bids are submitted
2. All the documents mentioned in the Eligibility criteria
3. Details of the make, model and technical features of the offered Equipment vis-à-vis specification as per Section – VI
4. Technical Compliance of the equipments in the format in Section VIIA.
5. Standard Technical literature on each of the items offered
6. Authorisation certificate on the offered products from OEM in case of distributor/dealer

7. List of Government organizations, where similar orders have been executed (copies of the purchase/work orders and their satisfactory completion certificate will have to be enclosed)
8. The bidders / OEM should attach a self declaration stating that he is not banned / debarred from working with any Central Government / PSU / State Govt of India / Any other Govt Agencies or any Institute of National/ International importance.
9. Up-to-date Sales Tax clearance certificate (for vendors outside the State of Bihar)/VAT registration certificate indicating also the TIN number (for vendors from within the State of Bihar) of the FIRM will have to accompany the tender to be submitted;
10. Copy of PAN must be submitted of FIRM / Bidder along with the Technical Bid;
11. Details of nature and maximum period of Warranty offered by the OEM/ Bidder in respect of each equipment.
12. Amount of Earnest Money Deposited (EMD)Rs. 2.00 Lakh, in the form of **Demand Draft in favor of I.G.S.C Planetarium, Patna only**, will have to be clearly stated and the same will have to be enclosed with Technical Bid only;
13. A copy of the Price bid, WITHOUT MENTIONING THE PRICES, will have to be provided as part of the Technical Bid document. The format is given at Section VIIA

**In the part relating to Price Bid, the OEM/Vendor must provide the following:-**

- 1 Quantity, basic price (against item-wise details of specifications of each of the offered items);
- 2 Prices of each of the optional accessories, as required by specifications and may be relevant for offered Equipment, will have to be specifically stated in the quotation

- 3 Central / Sales Tax/ VAT (as percentage of basic price + packing & forwarding charges if any)
- 4 Installation & commissioning charge (including Service Tax), to be shown item-wise extra, if any.
- 5 Freight & insurance charge, if any.
- 6 Annual Maintenance contract (AMC) rate (after expiry of warranty period) is to be clearly indicated – preferably in both comprehensive and non-comprehensive terms. The total period (warranty+ AMC) must be for a period of 5 years which will be taken for evaluation

## 6. Bid Prices

- 6.1. The Bidder shall indicate on the Price Schedule the unit prices and total bid prices. However, Bidders shall quote for the complete requirement of goods and other necessary civil / carpentry or any necessary works required for installation & commissioning of equipments shall be on a single responsibility basis, failing which such bids will not be taken into account for evaluation and will not be considered for award.
- 6.2. Prices indicated on the Price Schedule shall be entered separately in the following manner:
  - i. the price of the goods, quoted (ex-works, ex-factory, ex-showroom, ex-warehouse, or off-the-shelf applicable), including all duties and sales and other taxes already paid or payable;
  - ii. Any Indian duties, sales and other taxes which will be payable on the goods if this Contract is awarded;
  - iii. The price for inland transportation, insurance and other local costs incidental to delivery of the goods to their final destination;
  - iv. The prices of other incidental services listed in clause 8 of the special conditions of contract.
  - v. The cost of necessary civil works, acoustic paneling, scaffolding & minor fabrication works for installation of equipment
- 6.3. The Bidder's separation of the price components in accordance with above mentioned clause will be solely for the purpose of facilitating the comparison of bids by the Purchaser and will not in any way limit the Purchaser's right to contract on any of the terms offered.
- 6.4. **Fixed Price.** Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

## 7. Bid Currencies



Prices shall be quoted in Indian Rupees:

## **8. Documents Establishing Bidder's Eligibility and Qualifications**

- i. Pursuant to the clause of Eligibility criteria, Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the Contract if its bid is accepted.
- ii. The documentary evidence of the Bidder's qualifications to perform the Contract if its bid is accepted, shall establish to the Purchaser's satisfaction:
  - (a) That, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Manufacturer or producer to supply the goods in India.

*[Note: Supplies for any particular item of the bid should be from one manufacturer only. Bids from agents offering supplies from different manufacturer's for the same item of the schedule in the bid will be treated as non-responsive.]*

- (b) that the Bidder has the financial, technical, and production capability necessary to perform the Contract and meets the criteria outlined in the Qualification requirements specified in the tender document . To this end, all bids submitted shall include the following information:
  - (i) The legal status, place of registration and principal place of business of the company or firm or partnership, etc.;
  - (ii) Details of experience and past performance of the bidder on equipment offered and on those of similar nature within the past three years and details of current contracts in hand and other commitments

## **9. Documents Establishing Goods' Eligibility and Conformity to Bidding Documents**

- 9.1. Pursuant to tender clause “ Technical specification” , the Bidder shall furnish technical specification compliance as part of its bid along with documents establishing the eligibility and conformity of all goods and services which the Bidder proposes to supply under the contract.
- 9.2. The documentary evidence of the goods and services eligibility shall consist of a statement in the Price Schedule on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment.
- 9.3. The documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings and data, and shall consist of :
  - (a) a detailed description of the essential technical and performance characteristics of the goods ;

- (b) a list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two years, following commencement of the use of the goods by the Purchaser; and
- (c) an item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

9.4 For purposes of the commentary to be furnished pursuant to tender Clause 9.3(c) above, the Bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

## **10. Bid Security**

- 10.1. The bid security is required to protect the Purchaser against the risk of Bidder's conduct which would warrant the security's forfeiture.
- 10.2. (a) The bid security shall be denominated in Indian Rupees and shall:
  - be in the form of a demand draft from a nationalized / Scheduled Bank located in India;
  - (b) be submitted in its original form; copies will not be accepted; and
  - (c) remain valid for a period of 240 days beyond the original validity period of bids
- 10.3. Any bid not secured in accordance with tender Clauses 10.1 and 9.2 will be rejected by the Purchaser as non-responsive
- 10.4. Unsuccessful bidder's bid securities will be discharged/returned as promptly as possible but not later than 30 days after the expiration of the period of bid validity prescribed by the Purchaser,.
- 10.5. The successful Bidder's bid security will be discharged upon the Bidder signing the Contract and furnishing the performance security,
- 10.6. The bid security may be forfeited:
  - (a) if a Bidder (i) withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or (ii) does not accept the correction of errors pursuant
  - (b) in case of a successful Bidder, if the Bidder fails:
    - (i) to sign the Contract
    - (ii) to furnish performance security

## **11. Period of Validity of Bids**

- 11.1. Bids shall remain valid for 240 days after the deadline for submission of bids prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

11.2. In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing or by mail or fax). The bid security provided under tender Clause "Bid Security" shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid,

## 12. Format and Signing of Bid

12.1. The Bidder should have copies of the documents submitted in bid for his reference. However for the purchaser the documents enclosed by the bidder will be considered as original document.

12.2. The bidder must put signatures as guided in the tender documents.

12.3. The original and all copies of the documents attached shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The latter authorization shall be indicated by written power-of-attorney accompanying the bid. All pages of the bid, except for un-amended printed literature, shall be initialed by the person or persons signing the bid.

12.4. Any interlineations, erasures or overwriting shall be valid only if they are initialed by the persons or persons signing the bid.

## D. Bidding Process

### 13. SUBMISSION OF BID

13.1 The Bidder is expected to examine all instructions and Schedules detailed in the Specification and submit the Schedule of prices and other required particulars as called for in this tender specification. All bids shall be prepared by typing or printing with indelible black ink. The Bidder's proposal and the documents attached thereto shall be considered as forming a part of the Contract. All corrections, over typing etc. in the tender should be attested by the tender signing authority.

13.2 The Bids shall be submitted in two parts as detailed below:-

#### **Part – I - "ENVELOPE – A" (Technical Bid)**

The above Envelope shall contain

a. A Demand Draft towards E.M.D.

b. Documentary evidence required for Bid qualification requirement.

Technical details of the equipments with required necessary works & Commercial terms and conditions (except price). **THIS ENVELOPE – "A"**

**SHOULD NOT CONTAIN ANY PRICE DETAIL**

#### **Part – II - "ENVELOPE – B" (Financial Bid)**

The above Envelope shall contain only the PRICE details as called for. The above two Envelopes shall be separately sealed, superscribed "Tender for Audio Visual Equipments against Tender No. addressed to :-

The Project Director,  
Bihar Council On Science and Technology,

I.G.S.C. Planetarium,  
Adalatganj, Bailey Road,  
Patna - 800001.  
India

Envelope-A and Envelope-B shall be enclosed in an **Overall Sealed Envelope**, superscribed "Tender for Audio Visual Solution for Auditorium at I.G.S.C. Planetarium, Patna against tender No. \_\_\_\_\_ addressed to The Project Director,  
Bihar Council On Science and Technology,  
I.G.S.C. Planetarium,  
Adalatganj, Bailey Road,  
Patna - 800001.  
India

13.3 **Envelope-A** and **Envelope-B** and the overall envelope should be individually sealed and superscribed as above. Bidder's name, Contact detail (Mob. No./ Tel. No./ Email) and postal address shall be indicated in all the envelopes. The Bidders have the option of sending the bid by registered post or submitting the bid in person, so as to ensure that the bids are received in the specified office of the Purchaser by the date and time indicated in the "INVITATION FOR BID". In case of sending by post, Bidders are advised to send them well in advance so that they are delivered at the Office of the Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Patna before the prescribed date and time. The Bids delivered in person / courier shall be handed over to the Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Patna before 15.00 hours on the due date.

**13.3 The Purchaser will not be responsible for any postal or other transit loss or delay in receipt of the Bid. Telex / Fax / E-mail or Telegraphic Bids will not be entertained and will be rejected.**

13.4 Bid documents are not transferable. Bids received from those who have not purchased the bid documents will not be opened and returned unopened.

13.5 Any Bid received by the Purchaser after the due date and time specified for submission of tender offer, will be rejected and returned unopened to the tenderer.

13.6 Bids not accompanied by the EMD or with inadequate value shall not be entertained and such bids shall be rejected.

13.7 The overall sealed envelope will be opened first and envelope-A will be taken out in the presence of the bidders on the due date and time. The technical details and commercial conditions of the bidders who have satisfied the EMD requirement will be read out. **If any of the Bidders indicate the price in Envelope-A, the same will be rejected.**

13.8 **Envelope-B** will not be opened at the time of opening of Envelope-A but will be authenticated in the covers by the officers authorised to open the Technical Bids. Envelope-B of the Bidders, as authenticated will be kept under the safe custody of the empowered officer to open the bid. Envelope-B (Financial Bid) will be opened later, under intimation to the Bidders after scrutiny of the Bid Qualification requirements and after evaluation of Technical Bids.

13.9 The Bid must contain the name, residence and place of business of the person or persons making the Bid and must be signed and sealed by the BIDDER with his usual signature. The names of all persons signing should also be typed or printed below the signature. **Each and every page of the Bid documents should be serially numbered and properly signed.**

13.10 The Bids must clearly indicate the name of the MANUFACTURER, the type or model of each principal item of equipment proposed to be supplied and installed. The Bid should also contain drawings and descriptive materials indicating general dimensions, material from which the parts are manufactured, principles of operation, the extent of pre-assembly involved, and the proposed installation etc.,

13.10.1 Quality assurance documentation as specified.

13.10.2 Weights and dimensions of principal equipments, parts, method of unloading transport to site and handling during installation.

13.10.3 Any Bid not containing sufficient descriptive materials to describe accurately the materials proposed, shall be treated as incomplete and rejected. Such materials and drawings submitted by the BIDDER will be retained by the PURCHASER. Any major departure from these drawings and descriptive materials, submitted will not be permitted during the execution of the "Contract" without specific written permission of the PURCHASER.

## **E. Bid Opening and Evaluation of Bids**

### **14. Clarification of Bids**

14.1 During evaluation of bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted.

### **15 Preliminary Examination**

15.1 The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the bids are generally in order. Bids from Agents, without proper authorization from the manufacturer may be treated as non-responsive.

15.1 If the bid security furnished is inadequate for all the schedules, the Purchaser shall take the price bid into account only to the extent the bid is

secured. For this purpose, the extent to which the bid is secured shall be determined by evaluating the requirement of bid security to be furnished for the schedule included in the bid (offer) in the serial order of the Schedule of Requirements of the Bidding document.

- 15.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail. If the supplier does not accept the correction of errors, its bid will be rejected and its bid security may be forfeited.
- 15.3 The Purchaser may waive any minor informality or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder.
- 15.4 Prior to the detailed evaluation, pursuant to tender document the Purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security, Warranty, Force Majeure, Limitation of liability, Applicable law, Taxes & Duties and non compliance to technical specifications will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 15.5 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

## **16 Evaluation and Comparison of Bids**

- 16.1 The Technical evaluation of Bid will be made on the basis of Quality of Services & Equipments offered. The authorized committee will evaluate on the basis of equipments matching with the Technical Specification with acceptable deviations if any. No bid will be considered if the complete requirements covered in a schedule is not included in the bid.
- 16.2 The Purchaser's evaluation of a bid will take into account, in addition to the bid price (Ex-factory/ex-warehouse/off-the-shelf price of the goods offered from within India, such price to include all costs as well as duties and taxes paid or payable on components and raw material incorporated or to be incorporated in the goods, and Excise duty on the finished goods, if payable) and price of incidental services, the following factors, in the manner and to the extent indicated in tender Clauses and in the Technical Specifications:
- (a) cost of inland transportation, insurance and other costs within India incidental to the delivery of the goods to their final destination;
  - (b) delivery schedule offered in the bid;

- (c) deviations in payment schedule from that specified in the Special Conditions of Contract;
- (d) the cost of components, mandatory spare parts and service;
- (e) the availability in India of spare parts and after-sales services for the goods / equipment offered in the bid;
- (f) the projected operating and maintenance costs during the life of the equipment; and
- (g) the performance and productivity of the equipment offered.

16.3 While evaluating the bid, the basic price of equipment, Taxes/duties, incidental charges, Comprehensive Annual Maintenance Contract charges will be taken into account to find the bid value and to decide the L1 bidder. AMC charges of as many years would be taken for evaluation to make the period Warranty + AMC = 60 months.

## **17 Contacting the Purchaser**

- 17.1 Subject to tender Clause 17, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded. If the bidder wishes to bring additional information to the notice of the purchaser, it should do so in writing.
- 17.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.

## **F. Award of Contract**

### **18. Post qualification**

18.1 In the absence of prequalification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid meets the criteria specified in the tender and is qualified to perform the contract satisfactorily.

18.2 The determination will take into account the Bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to tender Clauses, as well as such other information as the Purchaser deems necessary and appropriate.

18.3 An affirmative determination will be a prerequisite for award of the Contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event the Purchaser will proceed to the next lowest evaluated bid to make a similar determination of that Bidder's capabilities to perform the contract satisfactorily.

## **19 Award Criteria**

**19.1** Subject to tender Clause 24, the Purchaser will award the Contract for the supply of specific lab packages to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid for that particular lab package, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

## **20 Purchaser's right to vary Quantities at Time of Award**

**20.1** The Purchaser reserves the right at the time of Contract award to increase or decrease by up to 25 percent of the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

## **21 Purchaser's Right to Accept Any Bid and to Reject Any or All Bids**

**21.1** The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or bidders.

## **22 Notification of Award**

**22.1** Prior to the expiration of the period of bid validity, the Purchaser will notify the successful bidder in writing by registered letter or fax or scanned copy through email, to be confirmed in writing by registered letter, that its bid has been accepted.

**22.2** The notification of award will constitute the formation of the Contract.

**22.3** Upon the successful Bidder's furnishing of performance security pursuant to tender Clause 27. the Purchaser will promptly notify the name of the winning bidder to each unsuccessful Bidder and will discharge its bid security, pursuant to tender clause .

**22.4** If, after notification of award, a Bidder wishes to ascertain the grounds on which its bid was not selected, it should address its request to the Purchaser. The Purchaser will promptly respond in writing to the unsuccessful Bidder.

## **23 Signing of Contract**

**23.1** At the same time as the Purchaser notifies the successful bidder that its bid has been accepted, the Purchaser will send the bidder the Contract Form provided in the bidding documents, incorporating all agreements between the parties.



**23.2** Within 7 days of receipt of the Contract Form, the successful bidder shall sign and date the Contract and return it to the Purchaser.

## **24 Performance Security**

**24.1** Within 7 days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the bidding documents or in another form acceptable to the Purchaser.

**24.2** Failure of the successful bidder to comply with the requirement of tender clause 26 and 27(GCC). shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Purchaser may make the award to the next lowest evaluated bidder or call for new bids.

## **25 Corrupt or Fraudulent Practices**

**25.1** It is the Govt.'s policy that Bidders, Suppliers, and Contractors, and their agents (whether declared or not), personnel, subcontractors, sub-consultants and service providers observe the highest standard of ethics during the procurement and execution of such contracts<sup>1</sup>. In pursuance of this policy, the Govt defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;
- (ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
- (iii) "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of the borrower, designed to establish bid prices at artificial, non competitive levels; and
- (iv) "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- (v) "Obstructive practice" is
  - (a) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent,

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<sup>1</sup> In this context, any action taken by a bidder, supplier, contractor, or any of its personnel, agents, subcontractors, sub-consultants, service providers, suppliers and/or their employees to influence the procurement process or contract execution for undue advantage is improper.

coercive or collusive practice; and /or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation,

(b) acts intended to materially impede the exercise of the Govt.'s inspection and audit rights provided for under sub – clause 28.1

(a) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;

**25.2** Furthermore, Bidders shall be aware of the provision stated in the General Conditions of Contract

Their employees to influence the procurement process or contract execution for undue advantage is improper.

25.2 Furthermore, Bidders shall be aware of the provisions stated in the General Conditions of Contract.

**SECTION III:**  
**GENERAL CONDITIONS OF CONTRACT**

**1. Definitions**

1.1. In this Contract, the following terms shall be interpreted as indicated:

- (a) **"The Contract"** means the agreement entered into between the Purchaser and the Supplier, as recorded in the Contract Form signed by the parties, including all the attachments and appendices thereto and all documents incorporated by reference therein;
- (b) **"The Contract Price"** means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- (c) **"The Goods"** means all the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract;
- (d) **"Services"** means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Supplier covered under the Contract;
- (e) **"GCC"** means the General Conditions of Contract contained in this section.
- (f) **"SCC"** means the Special Conditions of Contract.
- (g) **"The Purchaser"** means the organization purchasing the Goods, as named in SCC.
- (h) **"The Purchaser's country"** is the country named in SCC.

- (i) **“The Supplier”** means the individual or firm supplying the Goods and Services under this Contract.
- (k) **“The Site”**, where applicable, means the place of the organisation as named in SCC (i.e. I.G.S.C. Planetarium, Patna)
- (l) **“Day”** means calendar day.
- (m) **“Up time”** means the percentage of time the equipment remained operational with respect to total time.

## **2. Application**

- 2.1. These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

## **3. Standards**

3.1. The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications and when no applicable standard is mentioned; to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

## **4. Use of Contract Documents and Information**

- 4.1. The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 4.2. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in the Clause 4.1 except for purposes of performing the Contract.
- 4.3. Any document, other than the Contract itself, enumerated in GCC Clause 4.1 shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

## **5. Patent Rights**

- 5.1. The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

## **6. Performance Security**

- 6.1. Within 7 days of receipt of the notification of contract award, the Supplier shall furnish performance security in the amount specified in SCC.

- 6.2. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 6.3. The Performance Security shall be denominated in Indian Rupees and shall be in the form of a Bank guarantee or demand draft issued by a nationalized/scheduled bank located in India in the form provided in the bidding documents or another form acceptable to the Purchaser;
- 6.4. The performance security will be discharged by the Purchaser and returned to the Supplier not later than 30 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC.

## **7. Inspections and Tests**

- 7.1. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications. SCC and the Technical Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representatives deputed for these purposes.
- 7.2. The inspections and tests may be conducted on the premises of the Supplier or its sub contractor(s), at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the Purchaser.
- 7.3. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 7.4. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 7.5. Nothing in GCC Clause " Inspection & Tests" shall in any way release the Supplier from any warranty or other obligations under this Contract.

## **8. Packing**

- 8.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

- 8.2. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

## **9. Delivery and Documents**

- 9.1. Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the Purchaser in the Notification of Award. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

## **10. Insurance**

- 10.1. The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in SCC.
- 10.2. All safety precautions and compliance of statutory obligations shall be taken care by the selected bidder during execution of entire contract at site

## **11. Transportation**

- 11.1. Where the Supplier is required under the Contract to transport the Goods to a specified place of destination within India defined as Site, transport to such place including insurance, shall be arranged by the Supplier and the related cost shall be included in the Contract Price.

## **12. Incidental Services**

- 12.1. The supplier shall be required to provide any or all the following services, including additional services, if any, specified in SCC:
- A. furnishing of tools required for assembly and/or maintenance of the supplied Goods;
  - B. furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods;
  - c. training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance and/or repair of the supplied Goods.
- 12.2. Prices charged by the Supplier for incidental services, need to be quoted separately in the bid, and in any case shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

## **13. Spare Parts**

- 13.1. As specified in the SCC, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- (a) such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
- (b) In the event of termination of production of the spare parts:
  - (i) advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
  - (ii) following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

#### **14. Warranty**

- 14.1. The Supplier warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Purchaser's Specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.
- 14.2. This warranty shall remain valid for 12 months after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, or for 18 months after the date of shipment from the place of loading whichever period concludes earlier, unless specified otherwise in the SCC.
- 14.3. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.
- 14.4. Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without cost to the Purchaser other than, where applicable, the cost of inland delivery of the repaired or replaced Goods or parts from ex-works or ex-factory or ex-showroom to the final destination.
- 14.5. If the Supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

#### **15. Payment**

- 15.1. The method and conditions of payment to be made to the Supplier under this Contract shall be specified in the SCC.
- 15.2. The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted

pursuant to GCC Clause “ Delivery and Documents” , and upon fulfillment of other obligations stipulated in the contract.

- 15.3. Payments shall be made promptly by the Purchaser after submission of the invoice or claim by the Supplier.
- 15.4. Payment shall be made in Indian Rupees.

## **16. Prices**

- 16.1. Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in SCC or in the Purchaser’s request for bid validity extension, as the case may be
- 16.2. Prices quoted by the bidder shall not be higher than that quoted in any Govt. institutions in the state

## **17. Change Orders**

- 17.1. The Purchaser may at any time, by written order given to the Supplier pursuant to GCC Clause , make changes within the general scope of the Contract in any one or more of the following:
  - (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser.
  - (b) the method of shipping or packing;
  - (c) the place of delivery; and/or
  - (d) the Services to be provided by the Supplier.
- 17.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within Fifteen (15) days from the date of the Supplier's receipt of the Purchaser's change order.

## **18. Contract Amendments**

- 18.1. Subject to GCC Clause 17 “ Change order “ no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

## **19. Assignment**

- 19.1. The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.



## **20. Subcontracts**

- 20.1. The subcontracting is not permitted

## **21. Delays in the Supplier's Performance**

- 21.1. Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser in the Schedule of Requirements.
- 21.2. If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.
- 21.3. Except as provided under GCC Clause " Force Major" , a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause "Liquidation Damage", unless an extension of time is agreed upon pursuant to GCC clause 21.2 " without the application of liquidated damages.

## **22. Liquidated Damages**

- 22.1. Subject to GCC Clause " Force Majeure" , if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause " Termination for default"

## **23. Termination for Default**

- 23.1. The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:
- (a) if the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause " Delay in supplier performance"; or
  - (b) if the Supplier fails to perform any other obligation(s) under the Contract.

(c) if the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GCC Clause “ Fraud & corruption “, in competing for or in executing the Contract.

23.2. In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause “ Termination for default” , the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

#### **24. Force Majeure**

24.1. Notwithstanding the provisions of GCC Clauses “ Delay in the Supplier Performance”, “ Liquidated Damages”, “Termination for Default” the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

24.2. For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

24.3. If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

#### **25. Termination for Insolvency**

25.1. The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

#### **26. Termination for Convenience**

26.1. The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

- 26.2. The Goods that are complete and ready for shipment within 15 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
- (a) to have any portion completed and delivered at the Contract terms and prices; and/or
  - (b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

## **27. Settlement of Disputes**

- 27.1. The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 27.2. If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.
- 27.2.1 Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.
- 27.2.2 Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.
- 27.3. Notwithstanding any reference to arbitration herein,
- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
  - (b) the Purchaser shall pay the Supplier any monies due the Supplier.

## **28. Limitation of Liability**

- 28.1. Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause "patent Rights"
- (a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
  - (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract

Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment .

**29. Governing Language**

- 29.1. The contract shall be written in English language. Subject to GCC Clause “ Limitation of Liability” , English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

**30. Applicable Law**

- 30.1. The Contract shall be interpreted in accordance with the laws of the Union of India.

**31. Notices**

- 31.1. Any notice given by one party to the other pursuant to this Contract shall be sent to other party in writing or by cable, telex or facsimile and confirmed in writing to the other Party's address specified in SCC.
- 31.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

**32. Taxes and Duties**

- 32.1. Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser.

## SECTION IV:

### SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the General Conditions is indicated in parentheses.

#### 1. Definitions (GCC Clause 1)

(a) **The Purchaser is** The Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Bailey Road ,Patna PIN-800001

(b) **The Supplier is** : .....

#### 2. Performance Security (GCC Clause 6 “ Performance Security” )

2.1. Within 7 days after the Supplier’s receipt of Notification of Award, the Supplier shall furnish Performance Security to the Purchaser for an amount of 10% of the contract value, valid up to 60 days after the date of completion of performance obligations including warranty obligations.

2.2. In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material shall be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value shall be extended 60 days over and above the extended warranty period.

2.3. Performance security shall be submitted by the supplier in the form of crossed **demand draft drawn in favour of I.G.S.C. Planetarium, Patna**

2.4. The Performance Security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier’s performance obligations, including the warranty obligation, under the contract.

2.5. In the event of any contract amendment, the Supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the Contract, as amended for 60 days after the completion of performance obligations including warranty obligations.

#### 3. Inspection and Tests (GCC Clause 7 “ Inspection and Tests”)

The following inspection procedures and tests are required by the Purchaser:

(i) The inspection of the Goods shall be carried out to check whether the Goods are in conformity with the technical specifications attached to the contract and shall be in line with the inspection/test procedures laid down in the Technical Specifications and the General Conditions of contract. Following broad test procedure will generally be followed for inspection and testing of machine.

- The supplier will dispatch the goods after internal inspection testing along with the supplier's inspection report and manufacturer's warranty certificate.
- The supplier shall submit item wise acceptance test procedure
- The purchase will test the equipment after completion of the installation and commissioning at the site of the installation.
- For site preparation, the supplier should furnish all details to the purchaser sufficiently in advance so as to get the works completed before receipt of the equipment.
- Complete items/ accessories as specified in Section V should be supplied, installed and commissioned properly by the supplier prior to commencement of performance test.

(ii) The acceptance test will be conducted by the purchaser/their consultant or any other person nominated by the purchaser, at its option. There shall not be any additional charges for carrying out acceptance tests. The supplier shall maintain necessary log in respect of the results of the tests to establish to the entire satisfaction of the purchaser, the successful completion of the test specified.

(iii) In the event of the equipments failing to pass the acceptance test, a period not exceeding four weeks will be given to rectify the defects and clear the acceptance test, failing which the purchaser reserves the rights to get the equipment replaced by the supplier at no extra cost to the purchaser.

#### **4. Packing (GCC Clause 8 “Packaging” )**

**4.1.** Packing Instructions : The Supplier will be required to make separate packages with sufficient packing materials to ensure protection against transport and handling hazards. Each package will be marked on three sides with proper paint/indelible ink, the following:

- i) Name of equipment ii) Contract No. iii) Country of Origin of Goods iv) Supplier's Name, and v) Packing list reference number.

**4.2** If the Goods are breakable, appropriate warning be written on the packing case and also the sign “UP” to ensure vertical position.

#### **5. Delivery and Documents (GCC Clause 9 “ Delivery and Documents”)**

5.1 Unless otherwise stated delivery of goods at the I.G.S.C. Planetarium, Patna will have to be maximum within 60 (Sixty) days from the date of issue of the Purchase Order. All aspects of safe delivery shall be the exclusive responsibility of the OEM / Bidder.

5.2 Upon delivery of the Goods, the supplier shall notify the purchaser and the insurance company by email/fax the full details of the shipment including contract number, railway receipt number and date, description of goods, quantity, name of the consignee etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:

- (i) 4 Copies of the Supplier invoice showing contract number, goods' description, quantity, unit price, total amount;
- (ii) Transporter's acknowledgment of receipt
- (iii) 4 Copies of packing list identifying the contents of each package;
- (iv) Insurance Certificate;
- (v) Manufacturer's/Supplier's warranty certificate;
- (vi) Supplier's factory inspection report; and
- (vii) Certificate of Origin.

The above documents shall be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

## **6. Insurance ( GCC Clause 10 “Insurance”)**

**6.1.** For delivery of goods at site, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes.

## **7. Incidental Services ( GCC Clause 12 “ Incidental Services”)**

The following services covered under Clause 12 of GCC shall be furnished and the cost shall be included in the contract price:

- a. Performance of the onsite assembly, commissioning and start-up of the equipment.
- b. Furnishing the detailed operation and maintenance manuals for each items of the supply at each location.

- c. Training the purchaser personnel at the suppliers office or other facility, in the installation and operation of the equipment.
- d. Maintenance and repair of the equipment at each location during the warranty period including supply of all spares. This shall not relieve the supplier of any warranty obligation under this contract.
- e. Maintenance and/or repairs of the supplied goods for a period of three years after the end of warranty period. The bidder should indicate the spares and their costs, if any, which are not indicated in the maintenance contracts.

## **8. Spare Parts (GCC Clause 13“Spare Parts”)**

Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods. Other spare parts and components shall be supplied as promptly as possible but in any case within two months of placement of order.

## **9. Warranty and Comprehensive annual maintenance contract ( GCC Clause “ Warranty”)**

- 9.1. In partial modification of the provisions, the warranty period shall be of 12 months from date of installation of Goods. The Supplier shall comply with the performance guarantees specified under the contract.
- 9.2. Upon receipt of intimation by letter/email/call within the warranty period, the Supplier shall with all reasonable speed, repair or replace the defective goods or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter.
- 9.3. In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material shall be extended to a further period of 12 months.”
- 9.4. The period for correction of defects in the warranty period is 07 days.
- 9.5. After warranty period, the Supplier will do comprehensive annual maintenance of the equipment for such minimum period to make Warranty + AMC = 60 months at the price finalized in the contract.
- 9.6. During the Comprehensive AMC period, the supplier shall maintain the equipments as if they are in warranty period except that the Comprehensive AMC charges as quoted and finalised will be paid annually in arrears.
- 9.7. During the period of AMC, if the service provided by the bidder is not satisfactory, the purchaser reserves the right to terminate the AMC contract and appoint any other agency.



- 9.8.** At the start of the period of AMC, the bidder shall submit Bank guarantee from Nationalized / Scheduled Bank in India, equivalent to the 10% amount quoted in the AMC per year for the period AMC.
- 9.9.** During maintenance period, the Supplier shall maintain UP time of 99.9% on quarterly basis. Accordingly it is expected that the supplier shall maintain sufficient spares, locate intervention team appropriately to minimize the response time for maintenance complaint.
- 9.10.** In case, the equipment remains inoperative due to reasons attributable to the supplier for more than one week, the purchaser will take appropriate action in the form of financial penalty as well as black listing of the firm.

## **10. Payment ( GCC Clause “Payment”)**

Payment for Goods and Services shall be made in Indian Rupees as follows:

- Advance Payment 0 %
- 70% of the cost of equipment after completion of delivery.
- 90% of the project cost (Equipment + Installation ) after satisfactory commissioning of the equipments.
- Balance 10% after 6 months of commissioning and Acceptance Testing against submission of **PBG**.
- AMC charges will be paid half yearly in arrears.

## **11. Prices (GCC “Prices”)**

**11.1.** Prices payable to the supplier as stated in the contract shall be firm during the performance of the contract.

## **12. Sub-contracts ( GCC 20 “ Subcontracts”)**

Sub-contract shall not be permitted

## **13. Liquidated Damage ( GCC 22 “Liquidated Damages”)**

**13.1** For delays:

The applicable rate is 0.1% per week and the maximum deduction is 10% of the contract price.

## **14. Settlement of Dispute ( GCC 27 “ Settlement of Disputes”)**

The dispute settlement mechanism to be applied pursuant to GCC clause 27 shall be as follows:

- (a) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Purchaser and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two

arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Indian Council of Arbitration.

- (b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the Indian Council of Arbitration both in cases of the Foreign supplier as well as Indian supplier, shall appoint the arbitrator. A certified copy of the order of the Indian Council of Arbitration making such an appointment shall be furnished to each of the parties.
- (b) Arbitration proceedings shall be held at Patna India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (c) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.
- (d) Where the value of the contract is Rs. 1 crore and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely the Indian Council of Arbitration.

#### **15. Notices ( GCC clause “ Notices”)**

**For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.**

**Purchaser :**The Project Director, Bihar Council On Science & Technology, I.G.S.C. Planetarium, Adalatganj, Bailey Road, Patna - 800001

**Supplier: (To be filled in at the time of Contract signature)**

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***Supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:***

- Quantity dispatched/delivered to consignees and date;
- Date of delivery of complete equipments / Goods.
- Date of completion of Installation and commissioning;
- Date of Acceptance testing and start of warranty and
- Date of receipt of entire payments under the Contract.

**SECTION V:**

**SCHEDULE OF REQUIREMENT**

Package Name: Audio Visual Solution for auditorium of I.G.S.C. Planetarium,  
Patna

Sl. No.	Name of Equipment	Quantity
<b>Audio Component</b>		
01	Wireless Gooseneck Microphone	03
02	Wireless Handheld Microphone	02
03	Wireless Lapel Microphone	01
04	Wall Mount Speaker (Type A)	06
05	Wall Mount Speaker (Type B)	03
06	Amplifier	01
07	Mixer	01
08	Acoustic Rack	01
09	Audio cable	150
10	Microphone cable	50
11	Digital Lectern	01
12	Wireless Presentation Gateway with an iPad	01
<b>Video Component</b>		
13	UPS 3 KVA with 30 minutes backup	01
14	LCD Projector	01
15	Motorized Screen	01
16	Magnetic Board	01
17	Large Format Display 46"	03
18	Large Format Display 65"	01
19	Matrix Switcher	01
20	HDMI Distribution Amplifier	01
21	HDMI & IR Over Twisted Pair Transmitter	02
22	HDMI & IR Over Twisted Pair Receiver	02
23	HDMI Cable 2 mts	06
	HDMI Cable 5 mts	02
	HDMI Cable 15 mts	02
24	Shielded twister pair cable	75
25	Camera	02
26	DVR	01
27	HD Video Conferencing System	01
28	Switching & Connectivity	01

## SECTION VI

### Technical Specification

Sl. No.	Particulars	Minimum Specification
<b>1</b>	<b>Item</b>	<b>Gooseneck Microphone</b>
	Type	Condenser (electret bias)
	Frequency Response	50 to 17000 Hz
	Output Impedance (at 1000Hz)	EIA Rated at 150 Ohms (180 Ohms actual)
	Open Circuit Sensitivity (At 1KHz ref 1V per Pascal)	Cardioid : 21.1 mV
		Super Cardioid : 23.7mV
	Polarity	Positive Sound Pressure on diaphragm to produce positive voltage on Pin 2 relative to pin 3 of XLR output connector
	Maximum SPL (1 kHz at 1% THD, 1 kilohm load)	Cardioid: 123 dB
		Supercardioid: 122 dB
	Equivalent Output Noise (A-weighted)	Cardioid: 29 dB SPL
		Supercardioid: 28 dB SPL
	Signal-to-Noise Ratio (referenced at 94 dB SPL at 1 kHz)	Cardioid: 65 dB
		Super cardioid: 66 dB
	Dynamic Range (1 kilo ohm load at 1 kHz)	94 dB
	Common Mode Rejection	45 dB minimum
	Preamplifier Output Clipping Level (1% THD)	-6 dBV (0.5 V)
	Logic Connections - LED IN	Active low ( $\leq 1.0V$ ), TTL compatible. Absolute maximum voltage: -0.7V to 50V
	Logic Input Output	Loc I/O terminals for remote control
	Certification	CE Marking. Conforming to European EMC Directive 89/336/EEC. To Meet applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.
	Mute Switch Attenuation	50 dB minimum
	Microphone	18 inches desktop mini condenser, gooseneck mounted microphone
	Cartridge	Interchangeable
<b>2</b>	<b>Item</b>	<b>Wireless Hand Held Microphone</b>
	Compatible systems	4

	per frequency band:	
	Selectable frequencies:	8
	Included Antennas:	Internal 1/4-wave
	Rack Hardware:	Optional (WASRM for 2 single channel receivers, WADRM for dual channel receiver)
	Transmitter Display:	LED
	Battery, Endurance:	2AA, >10h
	TECHNICAL SPECS	
	Working Range :	Line of Sight
	HI power mode:	75 m (250 ft)
	LO power mode:	18 m (60 ft)
	Audio Frequency Response	50 Hz to 15 kHz
	Total Harmonic Distortion (Ref. $\pm 48$ kHz deviation, 1 kHz tone) :	<1%
	Positive pressure on microphone diaphragm :	positive voltage on pin 2 (with respect to pin 3 of XLR output) and the tip of the 6.35 mm (1/4-inch) output.
	Dynamic Range :	90 dB A-weighted, typical
	• Available Frequencies:	between 794 –806 MHz
	• Transmitter RF Output Power:	LO power mode:1 mW maximum HI power mode: 10 mW maximum
	• Audio Output Connector:	XLR balanced and 1/4" unbalanced
	• Maximum Output Level:	-19 dBV (XLR), -5 dBV (1/4") (ref. +/-33kHz deviation with 1 kHz tone)
	• Battery Life:	Up to 10 hours with 2 AA batteries
	• Dynamic Range:	>90dB, A-weighted
	• System Distortion:	<1 % (ref. $\pm 48$ kHz deviation, 1 kHz tone)
	Microphone type :	Less susceptible to feedback in high volume settings
	Microphone polar pattern :	Cardioid for most sound from in front of the microphone and some sound from the sides. .
	Microphone Cartridge type	Dynamic cartridge neodymium magnet with with rugged coil
		Internal shock mount for reduced handling noise.
	Control	On/off switch for onstage control.
	Microphone Frequency Response:	60 Hz - 15 kHz
	Microphone Sensitivity (1 kHz):	-53 dBV/Pa / 2.2 mV/Pa
	Handheld-	RF Level Switch between 1mW and 10mW, Up to 10 hours of battery life, Bottom on/off switch design, Power and battery status LED Battery, endurance: 10 h, Audio Input Level: -20 dBV maximum, Input Impedance: 22 k $\Omega$ , HI power mode: 10 mW maximum, LO power mode: 1 mW maximum, Receiver - Microprocessor-controlled External antenna diversity, up to 8 selectable frequency per band & up to 4 compatible channels per band, Maximum Output Level: -19 dBV (XLR), -5 dBV (1/4") (ref. +/-33kHz deviation with 1 kHz tone) mW, 2 Audio Output: 1/4" Connector, XLR Connector

3	<b>Item</b>	<b>Wireless Lapel Microphone</b>
	<b>Microphone</b> : Available Frequencies:	between 536 - 865 MHz
	<b>Microphone</b> : Operating Range:	250 ft. (75m) under typical conditions
	<b>Microphone</b> : Audio Frequency Response:	45 to 15,000 Hz +/- 4 dB
	<b>Microphone</b> : Transmitter RF Output Power:	10 mW typical
	<b>Microphone</b> : Audio Output Connector:	XLR balanced and 1/4" unbalanced
	<b>Microphone</b> : Maximum Output Level:	-19 dBV (XLR), -5 dBV (1/4") (ref. +/- 33 kHz deviation, 1 kHz tone)
	<b>Microphone</b> : Battery Life:	up to 8 hours with a 9V battery
	<b>Microphone</b> : Dynamic Range:	>100 dB, A-weighted
	<b>Microphone</b> : System Distortion:	.5% typical (ref. +/- 33 kHz deviation, 1 kHz modulation)
	Type	Visually discreet lapel microphone suitable for spoken word and presentations
	Pickup pattern	Cardioid pickup pattern for rejecting off-axis sound and provide superior gain before feedback.
	Condenser cartridge	Electret condenser cartridge for high sensitivity and a smooth, natural sound.
	Clip	Clothing clip for secure placement.
	Windscreen	Acoustic windscreen for minimizing wind noise in outdoor applications.
	<b>Transmitter</b>	
	Antenna	Antenna diversity to monitor signal strength, adjusting automatically for optimum reception.
	Frequencies	Up to 8 selectable frequencies per band and up to 4 compatible channels per band.
	Receiver Output Connectors	Receiver 1/4" output & XLR output connectors.
	<b>Audio Input Level :</b>	Mic setting -7 to -15 dBV, Line setting 9 to 1 dBV
	<b>Input Impedance :</b>	Mic setting 16k Ohms, Line setting 120k Ohms
	<b>Gain Adjust. Range :</b>	8 dB'
	<b>RF Output :</b>	<b>10mW Maximum</b>
	<b>Power Requirements :</b>	2 x AA size alkaline or rechargeable batteries
	<b>Battery Life :</b>	Up to 10 hours (alkaline)
	<b>RECEIVER</b>	
	<b>Audio Output Level :</b>	XLR connector into 100k Ohms load: -16 dBV ; 1/4" Jack connector into 100k Ohms load: -22 dBV; (Ref. ±48 kHz deviation with 1 kHz tone)
	<b>Output Impedance :</b>	XLR connector: 600 Ohms ; 1/4" Jack connector: 600 Ohms
	<b>RF Sensitivity :</b>	-105 dBm for 12 dB SINAD, typical;
	<b>Image Rejection :</b>	>50 dBm, typical

4	<b>Item</b>	<b>Speaker Type A</b>
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	Type	Full Range Driver
	<b>Driver compliment</b>	One 2.25" (57mm) full-range driver
	<b>Maximum acoustic output (pink noise)</b>	96 dB-SPL @ 1m
		102 dB-SPL (peak) @ 1m
	<b>Impedance</b>	8½ (transformer bypass)
	<b>Long-term power handling</b>	16W
	<b>Sensitivity (pink noise) SPL</b>	84 dB-SPL, 1W @ 1m
	<b>Frequency range (-/+3 dB)</b>	95 Hz - 17 kHz
	<b>Frequency range (-10 dB)</b>	80 Hz - 19 kHz
	<b>Nominal Dispersion</b>	170°H x 160°V (loudspeaker mounted horizontally)
	<b>Filter</b>	80 Hz high pass filter
	<b>Loudspeaker EQ</b>	required
	<b>Transformer Taps (70/100 V)</b>	70 V: 1 W, 2 W, 4 W, 8 W, 16 W 100 V: 2 W, 4 W, 8 W, 16 W
	<b>Construction features</b>	
	Enclosure	Injection-molded polypropylene enclosure
	Grille	Powder-coated steel
	<b>Finish</b>	Textured black or white finish with a contoured, powder-coated steel grille. Both the enclosure and grille can be painted.
	<b>Connectors</b>	The included mounting bracket features a three-terminal barrier strip. Optional junction boxes include a pre-wired ceramic connector and a thermal fuse for use when required.

5	Item	Speaker Type B
	Frequency Response	(+/-3 dB)1 80 Hz - 17 kHz
	Frequency Range	(-10 dB)1 70 Hz - 19 kHz
	Nominal Dispersion	125° H x 125° V
	Recommended High-Pass Filter	70 Hz high-pass filter
	Loudspeaker EQ	Recommended
	Overload Protection	PTC/Resistor
	Long Term Power Handling	40 W (160 W peak)
	Sensitivity	(SPL / 1 W @ 1 m)3 87 dB SPL
	Maximum SPL	@ 1 m4 103 dB SPL (109 dB SPL peak)
	Nominal Impedance	8 Ω (transformer bypassed)
	Transformer Taps (70/100 V)	70 V: 2.5 W, 5 W, 10 W, 20 W, 40 W
		100 V: 5 W, 10 W, 20 W, 40 W
	Driver Compliment	4.5" (114 mm) full-range driver
	Enclosure	PC/ABS, textured
	Grille	Powder-coated steel grille
	Environmental	Outdoor per IEC 529 IP55
	Connectors	Three-terminal barrier strip integrated on included mounting bracket. Optional accessories available for use when ceramic connector and thermal fuse are required.
	Wire gauge	18 AWG (0.8 mm) to 14 AWG (2.0 mm)

	Suspension / Mounting	Included bracket allows for horizontal or vertical mounting positions, each with either pitch or yaw adjustment. Insert on rear of enclosure sized for M4 x 14 mm screw for use with safety chain
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6	Item	Amplifier
<b>AUDIO INPUTS</b>		
<b>Mic/Line Inputs (4 – Balanced)</b>		
Connectors	3-pin Euroblock	
Input range	20 Hz – 20 kHz	
Input impedance	Mic 2 k Ohms /Line 25 k Ohms	
Maximum input level	Mic -20 dBu/Line 10 dBu	
Equivalent input noise	122 dB (A-weighted/20 Hz – 20 kHz)	
<b>Line Inputs (4 – Unbalanced)</b>		
Connectors	Dual RCA (summed to mono)	
Input range	20 Hz – 20 kHz	
Input impedance	10 k Ohms	
Maximum input level	+10 dBu	
<b>Page Input (1 – Balanced)</b>		
Connectors	4-pin Euroblock	
Input range	20 Hz – 20 kHz	
Input impedance	400 Ohms	
Maximum input level	30 dBu	
Equivalent input noise	122 dB (A-weighted/20 Hz – 20 kHz)	
<b>Direct Input (1 – Balanced)</b>		
Connectors	3-pin Euroblock	
Input range	20 Hz – 20 kHz	
Input impedance	18 k Ohms	
Maximum input level	+8 dBu	
<b>Direct AUDIO OUTPUTS Amplifier Outputs (2)</b>		
Connectors	5-terminal inverted Euroblock	
Nominal load	(70/100V) 50 Ohms @ 70V, 100 Ohms @ 100V	
Output impedance	4 Ohms	
<b>Auxiliary Output (1)</b>		
Connectors	3-pin Euroblock	
Output impedance	400 Ohms	
Maximum output level	2.2 dBV	
<b>PERFORMANCE</b>		
Amplifier power	2 x 120W @ 4½, 2 x 100W @ 70/100V	
THD (at full rated power)	<= 0.5%	
Crosstalk - (below rated power, 1 kHz)	<=-60 dBV	
Signal-to-Noise ratio - (below rated power, A-weighted)	75 dB	
Dynamic range	80 dB	
Frequency response	40 Hz – 16 kHz (+0/-3 dB)	
Sampling rate	44.1 kHz	
A/D and D/A converters	24-bit	
Communication port	RS-232 serial port	
LED status indicators	Power – blue; Signal present – green; Clip – red	

7	Item	Mixer
	Type	Automatic microphone mixer



	Form Factor	Rack Mountable
	EQ	Adjustable EQ per channel: low-frequency rolloff and high frequency shelving
	Power	48 V phantom power selectable for each input
	I/O	Active balanced microphone- and line-level inputs and line-level output
	Circuit	Highly RF-resistant chassis and circuitry
	Indicator	LED indication of channel clipping
	Scalability	Linking capability for systems up to 32 microphones
	Input (Aux)	Two Aux-level input jacks that feed one channel
	Headphone out	Front-panel headphones output with level control
	Output Limiter	Peak-responding output limiter with selectable thresholds and LED indicator
	Frequency Response	(Ref 1 kHz, channel controls centered) 50 Hz to 20 kHz +2 dB; -3 dB corner at 25 Hz
	THD	Total Harmonic Distortion <0.1% at +18 dBV output level, 50 Hz to 20 kHz (through 20 Hz-20 kHz filter; Input 1 and Master at 5, all other controls full counterclockwise)
	Hum & Noise	<b>Hum and Noise</b> : Equivalent Input Noise: -125 dBV (150 $\Omega$ source; through 400 Hz–20 kHz filter)
		Equivalent Input Hum and Noise: -123 dBV (150 $\Omega$ source; through 20 Hz - 20 kHz filter)
		<b>Output Hum and Noise</b> : (through 20 Hz–20 kHz filter; channel controls full counterclockwise) Master full counterclockwise: -90 dBV Master full clockwise: -62 dBV
	Common Mode Rejection :	>70 dB at 1 kHz
	Polarity	Mic/Line, Send inputs to all outputs are non-inverting; Aux input to all outputs is inverting
	Input Channel	Each input channel to have a two band equaliser, switchable microphone - or- line-level operation, switchable phantom power and a send/receive jack
	Protection	Overload and Shorting Protection. Shorting outputs, even for prolonged periods, for no damage. Microphone inputs should not be damaged by signals up to 3 V; Line and Monitor inputs by signals up to 20 V
	Equalization	Low-frequency: 6 dB/octave cut, adjustable corner from 25 to 320 Hz High-frequency : 6 dB at 5 kHz, 8 dB at 10 kHz, shelving'
	Limiter	Type: Peak Threshold: Switchable: off, +4, +8, +16 (dBm at output) Attack Time: 2 msec Recovery Time: 300 msec Indicator: Lights red when limiting occurs
	Phantom Power	46 Vdc open-circuit through 6.8 kW series resistance per DIN 45 596
	Limiter	Type: Peak, Threshold: Switchable: off, +4, +8, +16 (dBm at output) Attack Time: 2 msec Recovery Time: 300 msec Indicator: Lights red when limiting occurs
	Phantom Power	46 Vdc open-circuit through 6.8 kW series resistance per

	DIN 45 596
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8	Item	Acoustic rack
	Size	15U 450mm
	Enclosure	Minimum 22SWG
		Powder Coated
		Supplied with PDU
		Cooling Fans

9	Item	Audio Cable
	<b>Construction</b>	
	Conductors:	16 AWG, (26/30) Bare copper conductors.
	Insulation:	PVC color coded: Red, Black.
	Outer jacket color:	Dark Gray w/blue lettering.
	<b>Diameters</b>	
	Conductor:	0.058 inch ,1.478mm.
	Outer jacket:	0.205inch, 5.2mm.
	PVC insulation:	0.079 inch, 2.0 mm diameter.
	<b>Electrical</b>	
	DC resistance:	4.17Ω per 1000ft, 13.7Ω per km.
	Temperature:	- 4 ° to 167° Fahrenheit, - 20° to 75° Celsius.
	<b>Regulatory</b>	
	CSA:	FT4.
	RoHS:	Compliant in accordance with European directive 2002/95/IEC.
	UL:	CL2.

10	Item	Microphone Cable
	<b>Construction</b>	
	Conductors:	20 AWG, (10/30) tinned copper conductors.
	Drain Wire:	20 AWG (10/30) tinned copper (in contact with shield)
	Insulation:	PVC color coded: Red, Black.
	Outer jacket color:	Dark Gray w/blue lettering.
	Shield:	Aluminum/Mylar foil with 25% overlapping.
	<b>Diameters</b>	
	Conductor:	0.036 inch, 0.916mm
	Outer jacket:	0.213 inch, 5.4mm.
	PVC insulation:	0.44mm nominal thickness. 0.071 inch, 1.8 mm diameter.
	<b>Electrical</b>	
	DC resistance:	10.5Ω per 1000 ft, 34.6Ω per km.
	Impedance:	40-100Ω.
	Mutual capacitance conductor-conductor:	27pF per foot, 89pF per meter.
	Mutual capacitance connected to shield:	49 pF per foot, 161 pF per meter.
	Temperature:	- 4 ° to 167° Fahrenheit, - 20° to 75° Celsius.
	<b>Regulatory</b>	
	CSA:	FT4.
	RoHS:	Compliant in accordance with European directive 2002/95/IEC.
	UL:	CL2.

11	Item	Digital Lectern
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<p>Standard Features</p> <p>Touch Technology 19” hand-touch led screen technology based on Digitizer technology.</p> <p>Power Consumption Up to 320W</p> <p>Software Specification</p> <p>Hand and pen software to create applications.</p> <p>Supported operating system</p> <p>Windows XP, Vista, Window 7 and latest.</p> <p>Other</p> <ul style="list-style-type: none"> <li>• Administrator privileges</li> <li>• Internet access</li> <li>• Up-to-date antivirus utility licensed for minimum one year.</li> </ul> <p>19”LED Tablet Monitor</p> <p>BODY</p> <p>Material wooden and 1.5mm stain steel</p> <p>Sliding cover Opening/Closing the cover easily</p> <p>Soft wheels Moving podium with convenience</p> <p>Adjusting Monitor Angle system (Actuator)</p> <p>User can set monitor angle as user’s want</p>
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12	Item	Wireless Presentation Gateway
		• Wireless Audio & Video both from Laptop to Display over Wi-Fi
		• Wireless Wi-Fi range - 25 meters
		• In-Built Interactive White Board and Annotation
		• Driverless IWB/Touch Screen Support (UST) Teachers and students interact on IWB/Touch WIRELESSLY
		• Plug n Show - Use USB Token pen-drive to run without Installation
		• Get 4:1 Quad View screen - 4 Laptops sharing screen simultaneously
		• Support up to 64 concurrent login users
		• Conference Control: Mediator function through the device web page or Stand by screen
		• Support Wireless Multi-touch control (Win7/8 standard HID compatible Device)
		• Support drawing feature for projecting sender screen, or drawing on Whiteboard without PC
		• SNMP V3: manage/configure multiple presenter through SNMP V3 protocol
		• Security design: Session Login Code, WEP/WPA/WPA-Enterprise Wi-Fi Security, and Gate Keeper
		• Use Wi- Fi Doc to play ppt, doc, PDF, xls, JPG from iPhone / iPad / Android on Full screen
		• Use Side Pad on iPad / iPhone to control the projecting Laptop / PC
		• Remote View using Brower slide on Laptop / iPad / iPhone / Android to control the screen of projecting Laptop / PC
		• Connect 2 displays simultaneously via HDMI and VGA
		• Supports Windows 8 / 7 / Vista / XP / Mac OS X Lion / iPhone / iPad / Android
		• Equipped with RJ-45 port for wired LAN which allows users to browse Internet
		• Wi-Fi AP and AP-Client mode support
		• Wi-Fi 802.1b/g/n information
		• VGA - 1600 x 1200
		• HDMI - 1920 x 1080p
		• Audio Port - 3.5 mm
		• Enterprise Features Support MSI installer for Windows A.D. software dispatch and Command Line Execution

		• 2 x Front USB Ports for connecting USB Keyboard / Mouse
		• 1 x Rear USB Ports for connecting IWB / HID Interactive Board
	Standards	IEEE 802.11b/g/n 2.4GHz, IEEE 802.3(10BASE-T)/IEEE 802.3u(100BASE-TX)
	Data Rate	Wireless: Up to 300Mbps
	Protocol	TCP/IP, SNMP,
	IP configuration	Automatic: DHCP, Manual: Static IP address
	Management:	Web-based configuration, SNMP V3
	Security	IEEE Standard 64/128 bit WEP, WPA/WPA2-PSK, WPA/WPA2-Enterprise
	Antenna	Dual Dipole antenna
	Transmission Power	2dBi
	Receive Sensitivity	802.11b:11M-76 dBm
		802.11g:54M-67dBm
		802.11n: 65M HT20 -64dBm , 150M HT40 -61dBm
	Wireless Link Coverage	Up to 300 feet/100 meters, depends on environment
	Supported Resolution	PC/Laptop SVGA (800x600) / XGA (1024x768) / SXGA (1280x1024)
		WXGA (1280x768) / WSXGA (1440x900, 1600x1024) / UXGA (1600x1200)
		WUXGA (1920x1200) / QXGA (2048x1536) / Others
	Supported Resolution	Output VGA: SVGA (800x600) / XGA (1024x768) / WXGA(1280x768) / WXGA+(1280x800) / 1360 * 768 / 1440 * 900 / 1600 * 1200
		HDMI: 1280x720 (720P), 1920x1080 (1080i/1080p)
	Supported Account Right	Windows Administrators, Limited User, Guest
	Supported System	Operation Windows XP/Vista/7/8(Windows RT is not included)
		Mac OSX 10.7/10.8
		Android 2.2 and above(MobiShow/Wi-Fi-Doc/Side Pad Receiver), iOS 3.2 and above (MobiShow/Wi-Fi-Doc/Side Pad Receiver)
	Power	External Power adaptor 5V DC input 2.6A
	Interface	15Pin VGA
		USB Host x 3 (Front x2, Rear x1)
		HDMI
		RJ-45 LAN Port
		Stereo Phone Jack
		Reset Button
	LED	Power

<b>13</b>	<b>Item</b>	<b>UPS</b>
	Certifications	ISO 9001 and 14001 Certified OEM
	Technology	Rectifier & Inverter both with IGBT based Microprocessor Processing Design, Double Conversion True On-line UPS
	Input Voltage & Range	172-290V AC ,Single Phase on full load
	Input Frequency Range	50 Hz ± 10%
	Input Phase	Single Phase with ground
	Input Power Factor	>=0.95 at full load
	Output	1/2/3 KVA for respective requirement
	Voltage	220 / 230 /240 VAC

	Output regulation	Frequency	Free running Mode 50Hz ± 0.5Hz
	O/p Voltage Distortion		< 6% (Non-linear load)
			< 3% (linear load)
	Output Waveform		Pure Sine wave
	Battery Backup		180 minute
	Battery Type		Sealed lead maintenance free VRLA type
	Battery brand		EXIDE, PANASONIC, ROCKET, Quanta only
	VDC		Shall be 36VDC for 1Kva & 96VDC or more for 2/3Kva
	Battery Ratings (Min. VAH)		Min. 4000 VAH
	Noise level		<45 dB @ 1 Meter , EN 62040 – 2, 2006
	Protection		IP 20
	Bypass		Automatic Bypass Switch
	Surge Protection		External Transient Voltage Surge Suppressor at i/p of UPS of Surge capacity of 10kA with fast response time of <0.5nS alongwith monitoring LED
	DG Compatibility		UPS to be compatible with DG Set supply and mains supply
	Standard		RS 232 & USB port with software for monitoring & Shutdown of connected PCs.
	Alarms & Indications		All necessary alarms & indications essential for performance monitoring of UPS to be incorporated.
	LCD Display		Back-up time, Load, battery, Mode of operation, Fault

14	Item	LCD Projector
	LCD Size	0.63" with MLA
	native resolution	XGA
	Projection lens	Manual Optical Z: oom & Focus
	F number	1.51-1.99
	Focal length	18.2mm-29.2mm
	projection size	30"-300"
	White Light output	4500 lumens
	color light output	4500 lumens
	contrast	3000:1
	sound output	10 watt monoaural
	keystone correction	auto (+/- 30 degree Zoom:Tele) (Horizontal keystone Adjuster)
	Connectivity	
	D-Sub 15 Pin	1
	Component	D-sub 15pin (Blue molding) x 2 (in common with Analog RGB connector
	Composite	RCA (Yellow) x 1
	HDMI	1
	D-Sub 15pin (output)	1
	Audio Input Stereo Mini Jack	2
	Audio Output Stereo Mini Jack	1
	USB Type A	1
	USB Type B	1
	Control I/O	RS232C
	Network	Wireed LAN

<b>15</b>	<b>Item</b>	<b>Motorised Screen</b>
	Size Maximum	110"
	Type	Motorised
		Wall Mounted
		Supplied with remote
		Anti Reflective
		Hi Gain

<b>16</b>	<b>Item</b>	<b>Magnetic Board</b>
	Backdrop	Of actual size

<b>17</b>	<b>Item</b>	<b>Large Format Display</b>
	<b>Panel</b>	
	Monitor Type	55" LED with IPS Panel
	Aspect Ratio	16:09
	Native Resolution	1,920 x 1,080 (Full HD)
	Brightness	350cd/m2 or higher
	Contrast Ratio	1,100 : 1 or higher
	Dynamic CR	500,000 : 1 or higher
	Orientation	Portrait & Landscape
	Surface Treatment	Hard Coating, Anti-glare Treatment of the Front Polarizer
	Circuit board Protection	Dust & Humidity Protection Coated
	Viewing Angle (H x V)	178 x 178 degree
	<b>Connectivity</b>	
	Inputs	HDMI, DVI-D, RGB, Stereo Mini Jack, USB- 2 nos
	Outputs	Stereo Mini Jack, External Speaker Out
	External Control	RS232C (In/Out), RJ45, IR Receiver
	<b>Environment Conditions</b>	
	Operation Temperature	0 °C to 40 °C
	Operation Humidity	10 % to 80 %
	<b>Power Supply</b>	
	Power Supply	100-240V~, 50/60Hz
	Consumption	70W (Typ)/ 55W (SES)or more
	<b>Industrial Grade/Certification</b>	
	Safety	UL / cUL / CB / TUV / KC
	EMC	FCC Class "A" / CE / KCC
	Energy Star	Yes energy star 6.0 .

<b>18</b>	<b>Item</b>	<b>Large Format Display</b>
	<b>Panel</b>	
	Monitor Type	65" LED with IPS Panel
	Aspect Ratio	16:09
	Native Resolution	1,920 x 1,080 (Full HD)
	Brightness	350cd/m2 or higher
	Contrast Ratio	1,100 : 1 or higher
	Dynamic CR	500,000 : 1 or higher
	Orientation	Portrait & Landscape
	Surface Treatment	Hard Coating, Anti-glare Treatment of the Front Polarizer
	Circuit board Protection	Dust & Humidity Protection Coated

	Viewing Angle (H x V)	178 x 178 degree
	<b>Connectivity</b>	
	Inputs	HDMI, DVI-D, RGB, Stereo Mini Jack, USB- 2 nos
	Outputs	Stereo Mini Jack, External Speaker Out
	External Control	RS232C (In/Out), RJ45, IR Receiver
	<b>Environment Conditions</b>	
	Operation Temperature	0 °C to 40 °C
	Operation Humidity	10 % to 80 %
	<b>Power Supply</b>	
	Power Supply	100-240V~, 50/60Hz
	Consumption	70W (Typ)/ 55W (SES)or more
	<b>Industrial Grade/ Certification</b>	
	Safety	UL / cUL / CB / TUV / KC
	EMC	FCC Class “A” / CE / KCC
	Energy Star	Yes energy star 6.0 .

19	Item	Switcher Cum Scaler & Splitter
	<b>10-Input Analog &amp; HDMI Presentation Digital Scaler/Switcher with 2K Support and Ethernet Control</b>	HDTV Compatible.
		HDCP Compliant - The HDCP (High Definition Content Protection) license agreement allows copy-protected data on the HDMI input to pass only to the HDMI output.
		Multi-Standard - PAL & NTSC.
		Video Inputs - 4 HDMI, 2 computer graphics video on 15-pin HD connectors, 2 composite video & 2 component video on RCA connectors.
		Scaled Outputs - 1 HDMI, 1 RGBHV on BNC connectors, 1 VGA on a 15-pin HD connector, simultaneously.
		24 Output Resolutions - Up to UXGA/1080p and 2K.
		Companion AFV (Audio-Follow-Video) - Stereo audio for every input (on terminal blocks).
		Audio Inputs - 10 unbalanced stereo on terminal blocks, each with individual level controls.
		Audio Outputs - 1 S/PDIF & 1 unbalanced stereo audio on RCA connectors.
		Multiple Aspect Ratio Selections - Full, overscan, underscan, letterbox & panscan.
		Built-in ProcAmp - Color, hue, sharpness, noise, contrast & brightness.
		Front Panel Control - Audio mute, video blanking & freeze frame.
		Front Panel Lockout.
		Flexible Control Options - Front panel, IR remote with OSD (on-screen display), Ethernet & RS-232.
		Worldwide Power Supply - 100-240V AC. Standard 19" Rack Mount Size - 1U. Rack "ears" included.
	OUTPUT COLORSPACE	RGB.
	H FREQUENCY:	15.63-90kHz.

	V FREQUENCY:	50–100Hz.
	RGB SYNCs:	H and V TTL separated syncs.
	RGB LEVEL:	1.2Vpp max, 75W load.
	XGA OUT LEVEL:	1.2Vpp max, 75W load.
	OUTPUT RESOLUTIONS:	Native, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, 1280x800, 1440x900, 1400x1050, 1600x900, 2048x1080.
	OUTPUT REFRESH RATES :	60Hz for computer graphics resolutions; 50/60/59.94Hz (HDTV and 480i/p resolutions), 50/60Hz (2k 2048x1080 resolution), 50Hz (576i/p resolutions).
	CONTROLS:	CV 1, CV 2, component 1, component 2, PC 1, PC 2, HDMI 1, HDMI 2, HDMI 3, HDMI 4, input selector buttons; blank, mute, freeze buttons; menu, enter, menu arrows, reset to XGA/720p, lock buttons, RS–232, IR, Ethernet.
	POWER CONSUMPTION:	100–240V AC, 25VA max.
	OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F).
	STORAGE TEMPERATURE:	–40° to +70°C (–40° to 158°F).
	HUMIDITY:	10% to 90%, RHL non–condensing.

<b>20</b>	<b>Item</b>	<b>HDMI Distribution Amplifier</b>
	<b>1:8 HDMI Distribution Amplifier for HDMI signals. It reclocks and equalizes the signal and distributes it to 8 identical outputs.</b>	10.2 Gbps (3.4 Gbps Per Lane)
		HDTV Compatible.
		HDCP Compliant.
		HDMI Support - Deep Color, CEC.
		3D Pass-Through
		Plug-and-play – no software installation required
		Active Output LED Indicators.
		Power Consumption: DC 5V, 13 W
		Built-in bi-directional RS-232 serial control port for high-end system control
		Standard 19" Rack Mount Size - 1U. Rack "ears" included.
	INPUT:	1 HDMI connector.
	OUTPUTS:	8 HDMI connectors.
	BANDWIDTH:	10.2 Gbps (3.4 Gbps Per Lane)
	COMPLIANCE WITH HDMI STANDARD:	Supports HDMI and HDCP.
	CONTROLS:	Connector: 1 x DB-9 Female (Black)
	OPERATING TEMPERATURE:	0-50 °C
	STORAGE TEMPERATURE:	-20 - 60 °C
	HUMIDITY:	0 - 80% RH, Non-Condensing
	POWER CONSUMPTION:	5 VDC, 14.84W

<b>21</b>	<b>HDMI &amp; IR over Twisted Pair Transmitter</b>
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	<b>FEATURES</b>
	Max Data Rate – 10.2Gbps.
	HDTV Compatible.
	HDCP Compliant.
	Bi-directional RS-232 channel – allows you to connect to serial terminals or serial devices, such as touch screens and barcode scanners
	Bi-directional IR Support - 3.5mm.
	System Range - Up to 4K@35m (Cat 5e/6) / 40m (Cat 6a); 1080p@60m (Cat 5e/6) / 70m (Cat 6a)
	Cable - Uses 1 UTP (unshielded twisted pair) or STP (shielded twisted pair) CAT 5 cables.
	Passes EDID (Extended Display Identification Data).
	HDBaseT Anti-jamming – resists signal interference during high-quality video transmission using HDBaseT technology
	Power (Green)/Link (Orange) Status LED.
	POH (Power over HDBaseT) – supplies power from Transmitter to Receiver over a long distance via one Cat 5e/6/6a cable
	INPUTS: 1 HDMI connector.
	OUTPUTS: 1 CAT5 OUT on RJ-45 connectors.
	IR PORT: Bi-directional on a 3.5mm mini jack.
	BANDWIDTH: Supports up to 10.2Gbps bandwidth per graphic channel.
	POWER SOURCE: DC5V, 3.6W

<b>22</b>	<b>HDMI &amp; IR over Twisted Pair Receiver</b>
	Max. Data Rate - 10.2Gbps (3.4Gbps per lane)
	HDTV Compatible.
	HDCP Compliant.
	Bi-directional RS-232 channel – allows you to connect to serial terminals or serial devices, such as touch screens and barcode scanners
	Bidirectional IR Support.
	Optional IR Emitter Cables
	Optional External IR Receiver Cable.
	EDID PassThru - Passes EDID signals between the source and display.
	HDBaseT Anti-jamming – resists signal interference during high-quality video transmission using HDBaseT technology
	Status LEDs - Power (Green)/Link (Orange)
	POH (Power over HDBaseT) – supplies power from Transmitter to Receiver over a long distance via one Cat 5e/6/6a cable
	<b>TECHNICAL SPECIFICATIONS</b>
	INPUTS: 1 CAT 5 IN on RJ-45 connectors.
	OUTPUTS: 1 HDMI connector.
	IR PORT: Bidirectional on a 3.5mm mini jack.
	BANDWIDTH: 10.2Gbps (3.4Gbps per lane)
	POWER CONSUMPTION: DC5V, 4W

<b>23</b>	<b>All HDMI Cable</b>
	Low Smoke, Halogen Free, High Speed with Ethernet, 1.4a
	24Ct Gold Plated contacts
	3 Fold Shielding
	Conductor based on high purity copper
	Ethernet Network (up to 100 Mbit)

	Audio Return Channel
	3D-Video
	Additional Color Spaces
	Content Type
	2160p (4K x 2K Video)
	1080p (Full HD)
	1080i/720p
	Data rate up to 10.2 Gbit/s (340 Mhz bandwidth)
	Deep Color multi-bit; x.v.Color
	HDMI® 2.0 compatible
	HD Audio: DTS™ HD, Dolby® True HD, Dolby® Digital Plus, PCM, DVD Audio, SACD
	Up to 8 Audio-channels (24 Bit /192 kHz)
	Lip sync: automatic synchronisation between picture and sound
	2160p (4K x 2K Video)
	Data rate up to 10.2 Gbit/s (340 Mhz bandwidth)
	Deep Color multi-bit; x.v.Color
	HDMI® 2.0 compatible
	HD Audio: DTS™ HD, Dolby® True HD, Dolby® Digital Plus, PCM, DVD Audio, SACD
	Up to 8 Audio-channels (24 Bit /192 kHz)
	Lip sync: automatic synchronisation between picture and sound

<b>24</b>	<b>Data Cable</b>	
	Constrution	four shielded twisted pairs of 23SWG solid copper conductors
	Jacket	Unshielded
	Shield Material	100% aluminum foil, 25% overlap.
	Min bed radius	35mm
	Drain Wire	Solid 23AWG tinned copper
	Outside Diameter	7.6mm nominal
	<b>Electrical</b>	
	PROPAGATION DELAY SKEW	45ns/100m max
	IMPEDANCE	100Ω
	DC RESISTANCE	48Ω/km (13.8Ω/1000ft) nominal.
	MAX. RESISTANCE UNBALANCED	2%
	CAPACITANCE	1.2pF/m max
	TEMPERATURE	-20° to +70°C (-4° to 158°F)

<b>25</b>	<b>Camera</b>	
	<b>Features</b>	<b>Description</b>
	Image Sensor	1/3" Super HADII CCD
	Signal System	PAL/ NTSC
	Synchronizing System	Internal
	Horizontal Resolution	700TVL
	Lens	2.8-12mm
	IR LED	42PC IR LED
	Min. Illumination	0.01LUX/ F1.2
	Focus mode	Manual

	Elect ronic Shutter	1/ 50s(1/ 60s)-1/ 100, 000s (Auto/ Fixed)
	Exposure	Auto
	Gamma Correct ion	0.45
	White Blance	ATW / PUSH / PUSH-LOCK / MANUAL / Indoor / Out door
	S/ N Rat io	≥52dB
	AGC	Auto / Manual, 8 Levels
	BLC	Backlight Compensation , Highlight Suppre ssion , Digital Wide Dynamic Range
	Motion Detection	4 zone s, set position and size freely
	Control Mode	OSD Me nu, support 8 language s
	Vedio Output	1. 0Vp-p Composit e Output (75Ω / BNC)
	IR Light Wave lengt h	850nm
	IR Distance	30~40m
	Day & Night	Auto, Manual
	Indoor / Outdoor	IP 65
	Working Current	Max. 120mA+300mA (with IR on)
	Power Supply	DC12V (+/- 10%)
	Working Temperature	-20°C+50°C
	Working Humidity	≤95% RH nodew

<b>26</b>	<b>DVR</b>	
	<b>Parameter</b>	<b>Feature</b>
	Live View Resolution	4 CIF PAL VGA 1024 X 768
	Storage	1 TB
	No of Channels	4
	Video Compression	H. 264
	Recording Re solution	8CIF
	VGA & HDMI Output	1 -CH , Re solution 1024*768 / 60Hz
	Video Inputs	BNC
	Power Source	DC 12V
	Power Consumption	36 W ( With HDD)
	Ambient Operating Temperature	0 °C ~ +50 °C
	Ambient Operating Humidity	10% ~ 90

<b>27</b>	<b>Video Conferencing System</b>	
	<b>Parameter</b>	<b>Feature</b>
	Package	<ul style="list-style-type: none"> <li>• FHD Video codec</li> <li>• FHD PTZ camera</li> <li>• Mic Array (2x Mic)</li> <li>• Remote control</li> <li>• Cloud Meeting Room subscription (one year)</li> <li>• Power supplies, cables and accessories</li> <li>• 4-way Embedded SIP/H.323 MCU license</li> <li>• Wireless presentation &amp; collaboration (1-user license)</li> <li>• Two-year warranty with support and maintenance included</li> </ul>
	Video Standards and Resolutions	H.323 / SIP ITU Standards Transmission Speed : 64Kbps - 6Mbps
		• Resolution up to 1080p @ 60 fps

		<ul style="list-style-type: none"> <li>• H.261, H.263, H.263+/++</li> <li>• H.264/AVC High Profile – up to 6Mbps</li> </ul>
	Content Standards and Resolutions	<p>Support HD Data Sharing at 1080p Resolution using H.239 ITU Standard.</p> <p>System shall be supplied with 4-user wireless presentation and shall be upgradeable to 6users with software license.</p> <p>System shall have capability to stream content live to remote viewers and record in-room wireless presentations along with video and audio for future on-demand archiving and access.</p> <p>System shall support different layout options such as Full screen, Mosaic Tile Layout.</p> <p>Shall have the capability to beam the presentation to participants own devices giving freedom to watch in their preferred layouts.</p> <p>System shall have capability to generate dynamic access codes keep the meeting secure, and control what to share on-screen, ensuring nothing private is accidentally revealed.</p>
		It should support content resolution at 1080p 30fps
		It should also support audio from PC used for content sharing.
		It should transmit both people and content both simultaneously to the far end location at 1080p 30fps
	Audio Standards and Features	<ul style="list-style-type: none"> <li>• 20KHz: AAC-LD</li> <li>• 14KHz: G.722.1 Annex C</li> <li>• 7KHz: G.722, G.722.1</li> <li>• 3.4KHz: G.711, G.723.1, G.728. G.729. AMR (3G)</li> </ul>
		<p>Full duplex echo cancellation</p> <p>Automatic Noise suppression (ANS)</p> <p>Automatic gain control (AGC)</p> <p>Voice Activity Detention (VAD)</p>
	Video and Audio Inputs	2x HDMI, 2x USB 3.0,
		Balanced audio, USB, Line in
	Data Inputs	HDMI, Wireless, USB
	Video and Audio Outputs	Dual HD Output (DVI or HDMI); Dual Display support
		Balanced audio, Line out, HDMI
	Other Interfaces	2 x 10/100/1000 LAN port
		2 x RS-232 mini-DIN 8-pin
	Camera	<p>12x Optical zoom, f=3.9~47mm</p> <ul style="list-style-type: none"> <li>• 73° wide-angle view with auto-focus</li> <li>• USB 3.0 and DVI-I output</li> <li>• Full HD 1080p 60fps</li> <li>• Control: Remote control, USB (UVC), RS-232</li> <li>• Pan/Tilt Angles: ±170°, Tilt: -30° to +90°</li> </ul>
	Network Features	H.323 and SIP bandwidth up to 6 Mbps
		IPv4 support from day one and Upgradable to IPV6 by Software/Firmware Upgrade
		DiffServ
		IP Precedence
		Firewall Port Sync
		Port pinholing NAT IP address mask

		Packet loss recovery (FEC)ss
		Adaptive Bandwidth Adjustment
		Overhead prediction Lip sync correction
		Max packet size adjustment
	Multisite Feature	It should support atleast 4 sites at 1080p from Day one and upgradable to 9 way with additional License.
	Security	H.235 AES and NAT
		Authenticated access to admin menus, web interface and telnet API
		Local account password policy configuration
	Other Standards	H224/H.281, H.323 Annex Q, H.225, H.245, H.241, H.239, H.243, H.460
		Auto sensing power supply
		100-240 Volts,50-60 60Hz
	Additional Camera Features	+ Support for USB 3.0, USB 2.0, HDMI, and IP connections + Simultaneous video output to USB, HDMI, and IP streaming + Flexibility to control the camera's Pan, Tilt, and Zoom functions via RS-232 or USB (UVC) or IP-based web management + Supports H.264 and H.265 encoding, enabling 1080p@60fps video stream at ultra-low bandwidth + RTSP streaming via unicast & multicast + Line-in interface to stream audio
	<b>The proposed system must support PAL with a PTZ camera. The codec must be based on ITU standards The VC End Point should be a codec based hardware. No software based solution is accepted here. All components of the VC system like Codec, Camera and Microphone should be from the same OEM.</b>	

28	<b>Switching &amp; Connectivity</b>
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## SECTION VII

### BIHAR COUNCIL ON SCIENCE & TECHNOLOGY INDIRA GANDHI SCIENCE COMPLEX - PLANETARIUM, PATNA – 800001 TECHNICAL BID

**Format for Technical Bid for engagement of an agency for renovation work to be carried out at the Auditorium of I.G.S.C.Planetarium, Patna.**

1	Name of the Firm									
2	Complete Address									
3	Date of incorporation/ Establishment of the firm a)Telephone No(s) b)Fax No(s)  c)Email Id  d)Website									
4	Whether the Company is a Proprietorship firm, Pvt firm, Ltd Co, if so the names of the owner/ Directors etc., be furnished.									
5	PAN No									
6	TIN No									
7	Service Tax No									
8	Profile of the Firm	Please attach separate sheet with Brochure								
9	Financial Status	<table border="1"> <thead> <tr> <th>Year</th> <th>Annual Turnover</th> </tr> </thead> <tbody> <tr> <td>2013-14</td> <td></td> </tr> <tr> <td>2014-15</td> <td></td> </tr> <tr> <td>2015-16</td> <td></td> </tr> </tbody> </table>	Year	Annual Turnover	2013-14		2014-15		2015-16	
Year	Annual Turnover									
2013-14										
2014-15										
2015-16										
10	Experience in renovation work of auditoriums to be listed along with supporting work orders and performance certificates.									
11	I.Tender Document Fee (If downloaded) a) Demand Draft no. b) Date c) Drawn on Rupees in figure and words II. Money Receipt (Attach if Tender document purchased from IGSC Planetarium, Patna									

12	Earnest Money d) Demand Draft no. e) Date f) Drawn on g) Rupees in figure and words	
13	Details of equipments to be supplied with their make, model etc. as per the specification	Please see Technical compliance Table Section
14	Maintainance terms & conditions after free warranty period	
15	State detail address & setup link wherefrom support for maintainance during warranty period shall be offered	
16	Whether agreed to accept AMC after the warranty period is over (State YES / NO)	
17	Minimum down time to handle breakdown calls and or any sort of emergencies.	

Place :

Date:

Signature : \_\_\_\_\_

Name and Address with Seal:

**SECTION VII A**

**Technical Compliance ( To be submitted with Technical Bid)**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Minimum Specification</b>
<b>1</b>	<b>Item</b>	<b>Gooseneck Microphone</b>
	Type	Condenser (electret bias)
	Frequency Response	50 to 17000 Hz
	Output Impedance (at 1000Hz)	EIA Rated at 150 Ohms (180 Ohms actual)
	Open Circuit Sensitivity (At 1KHz ref 1V per Pascal)	Cardioid : 21.1 mV
		Super Cardioid : 23.7mV
	Polarity	Positive Sound Pressure on diaphragm to produce positive voltage on Pin 2 relative to pin 3 of XLR output connector
	Maximum SPL (1 kHz at 1% THD, 1 kilohm load)	Cardioid: 123 dB
		Supercardioid: 122 dB
	Equivalent Output Noise (A-weighted)	Cardioid: 29 dB SPL
		Supercardioid: 28 dB SPL
	Signal-to-Noise Ratio (referenced at 94 dB SPL at 1 kHz)	Cardioid: 65 dB
		Super cardioid: 66 dB
	Dynamic Range (1 kilo ohm load at 1 kHz)	94 dB
	Common Mode Rejection	45 dB minimum
	Preamplifier Output Clipping Level (1% THD)	-6 dBV (0.5 V)
	Logic Connections - LED IN	Active low ( $\leq 1.0V$ ), TTL compatible. Absolute maximum voltage: -0.7V to 50V
	Logic Input Output	Loc I/O terminals for remote control
	Certification	CE Marking. Conforming to European EMC Directive 89/336/EEC. To Meet applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.
	Mute Switch Attenuation	50 dB minimum
	Microphone	18 inches desktop mini condenser, gooseneck mounted microphone
	Cartridge	Interchangeable
	<b>Compliance Reason for deviation, if any with complete</b>	<b>Yes / No</b>



	justification	
2	<b>Item</b>	<b>Wireless Hand Held Microphone</b>
	Compatible systems per frequency band:	4
	Selectable frequencies:	8
	Included Antennas:	Internal 1/4-wave
	Rack Hardware:	Optional (WASRM for 2 single channel receivers, WADRM for dual channel receiver)
	Transmitter Display:	LED
	Battery, Endurance:	2AA, >10h
	TECHNICAL SPECS	
	Working Range :	Line of Sight
	HI power mode:	75 m (250 ft)
	LO power mode:	18 m (60 ft)
	Audio Frequency Response	50 Hz to 15 kHz
	Total Harmonic Distortion (Ref. $\pm 48$ kHz deviation, 1 kHz tone) :	<1%
	Positive pressure on microphone diaphragm :	positive voltage on pin 2 (with respect to pin 3 of XLR output) and the tip of the 6.35 mm (1/4-inch) output.
	Dynamic Range :	90 dB A-weighted, typical
	• Available Frequencies:	between 794 –806 MHz
	• Transmitter RF Output Power:	LO power mode:1 mW maximum HI power mode: 10 mW maximum
	• Audio Output Connector:	XLR balanced and 1/4" unbalanced
	• Maximum Output Level:	-19 dBV (XLR), -5 dBV (1/4") (ref. $\pm 33$ kHz deviation with 1 kHz tone)
	• Battery Life:	Up to 10 hours with 2 AA batteries
	• Dynamic Range:	>90dB, A-weighted
	• System Distortion:	<1 % (ref. $\pm 48$ kHz deviation, 1 kHz tone)
	Microphone type :	Less susceptible to feedback in high volume settings
	Micrhone polar pattern :	Cardioid for most sound from in front of the microphone and some sound from the sides. .
	Microphone Cartridge type	Dynamic cartridge neodymium magnet with with rugged coil
		Internal shock mount for reduced handling noise.
	Control	On/off switch for onstage control.
	Microphone Frequency Response:	60 Hz - 15 kHz
	Microphone Sensitivity (1 kHz):	-53 dBV/Pa / 2.2 mV/Pa
	Handheld-	RF Level Switch between 1mW and 10mW, Up to 10 hours of battery life, Bottom on/off switch design, Power and battery status LED Battery, endurance: 10 h, Audio Input Level: –20 dBV maximum, Input Impedance: 22 k $\Omega$ , HI power mode: 10 mW maximum, LO power mode: 1 mW maximum, Receiver - Microprocessor-controlled External antenna diversity, up to 8 selectable frequencise

	<b>Compliance</b>  <b>Reason for deviation, if any with complete justification</b>	per band & up to 4 compatible channels per band, Maximum Output Level: -19 dBV (XLR), -5 dBV (1/4") (ref. +/-33kHz deviation with 1 kHz tone) mW, 2 Audio Output: 1/4" Connector, XLR Connector <b>Yes / No</b>
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<b>3</b>	<b>Item</b>	<b>Wireless Lapel Microphone</b>
	<b>Microphone</b> : Available Frequencies:	between 536 - 865 MHz
	<b>Microphone</b> : Operating Range:	250 ft. (75m) under typical conditions
	<b>Microphone</b> : Audio Frequency Response:	45 to 15,000 Hz +/- 4 dB
	<b>Microphone</b> : Transmitter RF Output Power:	10 mW typical
	<b>Microphone</b> : Audio Output Connector:	XLR balanced and 1/4" unbalanced
	<b>Microphone</b> : Maximum Output Level:	-19 dBV (XLR), -5 dBV (1/4") (ref. +/- 33 kHz deviation, 1 kHz tone)
	<b>Microphone</b> : Battery Life:	up to 8 hours with a 9V battery
	<b>Microphone</b> : Dynamic Range:	>100 dB, A-weighted
	<b>Microphone</b> : System Distortion:	.5% typical (ref. +/- 33 kHz deviation, 1 kHz modulation)
	Type	Visually discreet lapel microphone suitable for spoken word and presentations
	Pickup pattern	Cardioid pickup pattern for rejecting off-axis sound and provide superior gain before feedback.
	Condenser cartridge	Electret condenser cartridge for high sensitivity and a smooth, natural sound.
	Clip	Clothing clip for secure placement.
	Windscreen	Acoustic windscreen for minimizing wind noise in outdoor applications.
	<b>Transmitter</b>	
	Antenna	Antenna diversity to monitor signal strength, adjusting automatically for optimum reception.
	Frequencies	Up to 8 selectable frequencies per band and up to 4 compatible channels per band.
	Receiver Output Connectors	Receiver 1/4" output & XLR output connectors.
	<b>Audio Input Level :</b>	Mic setting -7 to -15 dBV, Line setting 9 to 1 dBV
	<b>Input Impedance :</b>	Mic setting 16k Ohms, Line setting 120k Ohms
	<b>Gain Adjust. Range :</b>	8 dB'
	<b>RF Output :</b>	<b>10mW Maximum</b>
	<b>Power Requirements :</b>	2 x AA size alkaline or rechargeable batteries
	<b>Battery Life :</b>	Up to 10 hours (alkaline)
	<b>RECEIVER</b>	

	Audio Output Level :	XLR connector into 100k Ohms load: -16 dBV ; 1/4" Jack connector into 100k Ohms load: -22 dBV; (Ref. ±48 kHz deviation with 1 kHz tone)
	Output Impedance :	XLR connector: 600 Ohms ; 1/4" Jack connector: 600 Ohms
	RF Sensitivity :	-105 dBm for 12 dB SINAD, typical;
	Image Rejection : <b>Compliance</b> <b>Reason for deviation, if any with complete justification</b>	>50 dBm, typical <b>Yes / No</b>

4	Item	Speaker Type A
	Type	Full Range Driver
	<b>Driver compliment</b>	One 2.25" (57mm) full-range driver
	<b>Maximum acoustic output (pink noise)</b>	96 dB-SPL @ 1m 102 dB-SPL (peak) @ 1m
	<b>Impedance</b>	8½ (transformer bypass)
	<b>Long-term power handling</b>	16W
	<b>Sensitivity (pink noise) SPL</b>	84 dB-SPL, 1W @ 1m
	<b>Frequency range (-/+3 dB)</b>	95 Hz - 17 kHz
	<b>Frequency range (-10 dB)</b>	80 Hz - 19 kHz
	<b>Nominal Dispersion</b>	170°H x 160°V (loudspeaker mounted horizontally)
	<b>Filter</b>	80 Hz high pass filter
	<b>Loudspeaker EQ</b>	required
	<b>Transformer Taps (70/100 V)</b>	70 V: 1 W, 2 W, 4 W, 8 W, 16 W 100 V: 2 W, 4 W, 8 W, 16 W
	<b>Construction features</b>	
	Enclosure	Injection-molded polypropylene enclosure
	Grille	Powder-coated steel
	<b>Finish</b>	Textured black or white finish with a contoured, powder-coated steel grille. Both the enclosure and grille can be painted.
	<b>Connectors</b>  <b>Compliance</b> <b>Reason for deviation, if any with complete justification</b>	The included mounting bracket features a three-terminal barrier strip. Optional junction boxes include a pre-wired ceramic connector and a thermal fuse for use when required. <b>Yes / No</b>

5	Item	Speaker Type B
	Frequency Response	(+/-3 dB) 1 80 Hz - 17 kHz
	Frequency Range	(-10 dB) 1 70 Hz - 19 kHz
	Nominal Dispersion	125° H x 125° V
	Recommended High-Pass Filter	70 Hz high-pass filter

	Loudspeaker EQ	Recommended
	Overload Protection	PTC/Resistor
	Long Term Power Handling	40 W (160 W peak)
	Sensitivity	(SPL / 1 W @ 1 m)3 87 dB SPL
	Maximum SPL	@ 1 m4 103 dB SPL (109 dB SPL peak)
	Nominal Impedance	8 $\Omega$ (transformer bypassed)
	Transformer Taps (70/100 V)	70 V: 2.5 W, 5 W, 10 W, 20 W, 40 W 100 V: 5 W, 10 W, 20 W, 40 W
	Driver Compliment	4.5" (114 mm) full-range driver
	Enclosure	PC/ABS, textured
	Grille	Powder-coated steel grille
	Environmental	Outdoor per IEC 529 IP55
	Connectors	Three-terminal barrier strip integrated on included mounting bracket. Optional accessories available for use when ceramic connector and thermal fuse are required.
	Wire gauge	18 AWG (0.8 mm) to 14 AWG (2.0 mm)
	Suspension / Mounting	Included bracket allows for horizontal or vertical mounting positions, each with either pitch or yaw adjustment. Insert on rear of enclosure sized for M4 x 14 mm screw for use with safety chain
	<b>Compliance Reason for deviation, if any with complete justification</b>	<b>Yes / No</b>

6	Item	Amplifier
<b>AUDIO INPUTS</b>		
<b>Mic/Line Inputs (4 – Balanced)</b>		
Connectors	3-pin Euroblock	
Input range	20 Hz – 20 kHz	
Input impedance	Mic 2 k Ohms /Line 25 k Ohms	
Maximum input level	Mic -20 dBu/Line 10 dBu	
Equivalent input noise	122 dB (A-weighted/20 Hz – 20 kHz)	
<b>Line Inputs (4 – Unbalanced)</b>		
Connectors	Dual RCA (summed to mono)	
Input range	20 Hz – 20 kHz	
Input impedance	10 k Ohms	
Maximum input level	+10 dBu	
<b>Page Input (1 – Balanced)</b>		
Connectors	4-pin Euroblock	
Input range	20 Hz – 20 kHz	
Input impedance	400 Ohms	
Maximum input level	30 dBu	
Equivalent input noise	122 dB (A-weighted/20 Hz – 20 kHz)	
<b>Direct Input (1 – Balanced)</b>		
Connectors	3-pin Euroblock	
Input range	20 Hz – 20 kHz	
Input impedance	18 k Ohms	
Maximum input level	+8 dBu	
<b>Direct AUDIO OUTPUTS Amplifier Outputs (2)</b>		
Connectors	5-terminal inverted Euroblock	
Nominal load	(70/100V) 50 Ohms @ 70V, 100 Ohms @ 100V	

Output impedance	4 Ohms
<b>Auxiliary Output (1)</b>	
Connectors	3-pin Euroblock
Output impedance	400 Ohms
Maximum output level	2.2 dBV
<b>PERFORMANCE</b>	
Amplifier power	2 x 120W @ 4½, 2 x 100W @ 70/100V
THD (at full rated power)	<= 0.5%
Crosstalk - (below rated power, 1 kHz)	<=-60 dBV
Signal-to-Noise ratio - (below rated power, A-weighted)	75 dB
Dynamic range	80 dB
Frequency response	40 Hz – 16 kHz (+0/-3 dB)
Sampling rate	44.1 kHz
A/D and D/A converters	24-bit
Communication port	RS-232 serial port
LED status indicators	Power – blue; Signal present – green; Clip – red
<b>Compliance</b> <b>Reason for deviation, if any with complete justification</b>	<b>Yes / No</b>

7	Item	Mixer
	Type	Authomatic microphone mixer
	Form Factor	Rack Mountable
	EQ	Adjustable EQ per channel: low-frequency rolloff and high frequency shelving
	Power	48 V phantom power selectable for each input
	I/O	Active balanced microphone- and line-level inputs and line-level output
	Circuit	Highly RF-resistant chassis and circuitry
	Indicator	LED indication of channel clipping
	Scalability	Linking capability for systems up to 32 microphones
	Input (Aux)	Two Aux-level input jacks that feed one channel
	Headphone out	Front-panel headphones output with level control
	Output Limiter	Peak-responding output limiter with selectable thresh olds and LED indicator
	Frequency Response	(Ref 1 kHz, channel controls centered) 50 Hz to 20 kHz +2 dB; -3 dB corner at 25 Hz
	THD	Total Harmonic Distortion <0.1% at +18 dBV output level, 50 Hz to 20 kHz (through 20 Hz-20 kHz filter; Input 1 and Master at 5, all other controls full counterclockwise)
	Hum & Noise	<b>Hum and Noise</b> : Equivalent Input Noise: -125 dBV (150 Ω source; through 400 Hz–20 kHz filter)
		Equivalent Input Hum and Noise: -123 dBV (150 Ω source; through 20 Hz - 20 kHz filter)
		<b>Output Hum and Noise</b> : (through 20 Hz–20 kHz filter; channel controls full counterclockwise) Master full counterclockwise: -90 dBV Master full clockwise: -62 dBV
	Common Mode Rejection :	>70 dB at 1 kHz

	Polarity	Mic/Line, Send inputs to all outputs are non-inverting; Aux input to all outputs is inverting
	Input Channel	Each input channel to have a two band equaliser, switchable microphone - or- line-level operation, switchable phantom power and a send/receive jack
	Protection	Overload and Shorting Protection. Shorting outputs, even for prolonged periods, for no damage. Microphone inputs should not be damaged by signals up to 3 V; Line and Monitor inputs by signals up to 20 V
	Equalization	Low-frequency: 6 dB/octave cut, adjustable corner from 25 to 320 Hz High-frequency : 6 dB at 5 kHz, 8 dB at 10 kHz, shelving'
	Limiter	Type: Peak Threshold: Switchable: off, +4, +8, +16 (dBm at output) Attack Time: 2 msec Recovery Time: 300 msec Indicator: Lights red when limiting occurs
	Phantom Power	46 Vdc open-circuit through 6.8 kW series resistance per DIN 45 596
	Limiter	Type: Peak, Threshold: Switchable: off, +4, +8, +16 (dBm at output) Attack Time: 2 msec Recovery Time: 300 msec Indicator: Lights red when limiting occurs
	Phantom Power <b>Compliance Reason for deviation, if any with complete justification</b>	46 Vdc open-circuit through 6.8 kW series resistance per DIN 45 596 <b>Yes / No</b>

<b>8</b>	<b>Item</b>	<b>Acoustic rack</b>
	Size	15U 450mm
	Enclosure	Minimum 22SWG Powder Coated
		Supplied with PDU
	<b>Compliance Reason for deviation, if any with complete justification</b>	Cooling Fans <b>Yes / No</b>

<b>9</b>	<b>Item</b>	<b>Audio Cable</b>
	<b>Construction</b>	
	Conductors:	16 AWG, (26/30) Bare copper conductors.
	Insulation:	PVC color coded: Red, Black.
	Outer jacket color:	Dark Gray w/blue lettering.
	<b>Diameters</b>	
	Conductor:	0.058 inch ,1.478mm.
	Outer jacket:	0.205inch, 5.2mm.
	PVC insulation:	0.079 inch, 2.0 mm diameter.
	<b>Electrical</b>	
	DC resistance:	4.17Ω per 1000ft, 13.7Ω per km.
	Temperature:	- 4 ° to 167° Fahrenheit, - 20° to 75° Celsius.

	<b>Regulatory</b>	
	CSA:	FT4.
	RoHS:	Compliant in accordance with European directive 2002/95/IEC.
	UL: <b>Compliance Reason for deviation, if any with complete justification</b>	CL2. <b>Yes / No</b>

<b>10</b>	<b>Item</b>	<b>Microphone Cable</b>
	<b>Construction</b>	
	Conductors:	20 AWG, (10/30) tinned copper conductors.
	Drain Wire:	20 AWG (10/30) tinned copper (in contact with shield)
	Insulation:	PVC color coded: Red, Black.
	Outer jacket color:	Dark Gray w/blue lettering.
	Shield:	Aluminum/Mylar foil with 25% overlapping.
	<b>Diameters</b>	
	Conductor:	0.036 inch, 0.916mm
	Outer jacket:	0.213 inch, 5.4mm.
	PVC insulation:	0.44mm nominal thickness. 0.071 inch, 1.8 mm diameter.
	<b>Electrical</b>	
	DC resistance:	10.5Ω per 1000 ft, 34.6Ω per km.
	Impedance:	40-100Ω.
	Mutual capacitance conductor-conductor:	27pF per foot, 89pF per meter.
	Mutual capacitance connected to shield:	49 pF per foot, 161 pF per meter.
	Temperature:	- 4 ° to 167° Fahrenheit, - 20° to 75° Celsius.
	<b>Regulatory</b>	
	CSA:	FT4.
	RoHS:	Compliant in accordance with European directive 2002/95/IEC.
	UL: <b>Compliance Reason for deviation, if any with complete justification</b>	CL2. <b>Yes / No</b>

<b>11</b>	<b>Item</b>	<b>Digital Lectern</b>
	<p>Standard Features</p> <p>Touch Technology 19'' hand-touch led screen technology based on Digitizer technology.</p> <p>Power Consumption Up to 320W</p> <p>Software Specification</p> <p>Hand and pen software to create applications.</p> <p>Supported operating system</p> <p>Windows XP, Vista, Window 7 and latest.</p> <p>Other</p> <ul style="list-style-type: none"> <li>• Administrator privileges</li> <li>• Internet access</li> <li>• Up-to-date antivirus utility licensed for minimum one year.</li> </ul> <p>19''LED Tablet Monitor</p>	

	<p>BODY</p> <p>Material wooden and 1.5mm stain steel</p> <p>Sliding cover Opening/Closing the cover easily</p> <p>Soft wheels Moving podium with convenience</p> <p>Adjusting Monitor Angle system (Actuator)</p> <p>User can set monitor angle as user's want</p>
<b>Compliance</b>	<b>Yes / No</b>
	<b>Reason for deviation, if any with complete justification</b>

12	Item	Wireless Presentation Gateway
		• Wireless Audio & Video both from Laptop to Display over Wi-Fi
		• Wireless Wi-Fi range - 25 meters
		• In-Built Interactive White Board and Annotation
		• Driverless IWB/Touch Screen Support (UST) Teachers and students interact on IWB/Touch WIRELESSLY
		• Plug n Show - Use USB Token pen-drive to run without Installation
		• Get 4:1 Quad View screen - 4 Laptops sharing screen simultaneously
		• Support up to 64 concurrent login users
		• Conference Control: Mediator function through the device web page or Stand by screen
		• Support Wireless Multi-touch control (Win7/8 standard HID compatible Device)
		• Support drawing feature for projecting sender screen, or drawing on Whiteboard without PC
		• SNMP V3: manage/configure multiple presenter through SNMP V3 protocol
		• Security design: Session Login Code, WEP/WPA/WPA-Enterprise Wi-Fi Security, and Gate Keeper
		• Use Wi- Fi Doc to play ppt, doc, PDF, xls, JPG from iPhone / iPad / Android on Full screen
		• Use Side Pad on iPad / iPhone to control the projecting Laptop / PC
		• Remote View using Brower slide on Laptop / iPad / iPhone / Android to control the screen of projecting Laptop / PC
		• Connect 2 displays simultaneously via HDMI and VGA
		• Supports Windows 8 / 7 / Vista / XP / Mac OS X Lion / iPhone / iPad / Android
		• Equipped with RJ-45 port for wired LAN which allows users to browse Internet
		• Wi-Fi AP and AP-Client mode support
		• Wi-Fi 802.11b/g/n information
		• VGA - 1600 x 1200
		• HDMI - 1920 x 1080p
		• Audio Port - 3.5 mm
		• Enterprise Features Support MSI installer for Windows A.D. software dispatch and Command Line Execution
		• 2 x Front USB Ports for connecting USB Keyboard / Mouse
		• 1 x Rear USB Ports for connecting IWB / HID Interactive Board
	Standards	IEEE 802.11b/g/n 2.4GHz, IEEE 802.3(10BASE-T)/IEEE 802.3u(100BASE-TX)
	Data Rate	Wireless: Up to 300Mbps
	Protocol	TCP/IP, SNMP,
	IP configuration	Automatic: DHCP, Manual: Static IP address
	Management:	Web-based configuration, SNMP V3
	Security	IEEE Standard 64/128 bit WEP, WPA/WPA2-PSK, WPA/WPA2-Enterprise



	Antenna	Dual Dipole antenna
	Transmission Power	2dBi
	Receive Sensitivity	802.11b:11M-76 dBm
		802.11g:54M-67dBm
		802.11n: 65M HT20 -64dBm , 150M HT40 -61dBm
	Wireless Link Coverage	Up to 300 feet/100 meters, depends on environment
	Supported Resolution	PC/Laptop SVGA (800x600) / XGA (1024x768) / SXGA (1280x1024)
		WXGA (1280x768) / WSXGA (1440x900, 1600x1024) / UXGA (1600x1200)
		WUXGA (1920x1200) / QXGA (2048x1536) / Others
	Supported Resolution	Output VGA: SVGA (800x600) / XGA (1024x768) / WXGA(1280x768) / WXGA+(1280x800) / 1360 * 768 / 1440 * 900 / 1600 * 1200
		HDMI: 1280x720 (720P), 1920x1080 (1080i/1080p)
	Supported Account Right	Windows Administrators, Limited User, Guest
	Supported System	Operation Windows XP/Vista/7/8(Windows RT is not included)
		Mac OSX 10.7/10.8
		Android 2.2 and above(MobiShow/Wi-Fi-Doc/Side Pad Receiver), iOS 3.2 and above (MobiShow/Wi-Fi-Doc/Side Pad Receiver)
	Power	External Power adaptor 5V DC input 2.6A
	Interface	15Pin VGA
		USB Host x 3 (Front x2, Rear x1)
		HDMI
		RJ-45 LAN Port
		Stereo Phone Jack
		Reset Button
	LED	Power
	<b>Compliance</b>	<b>Yes / No</b>
		<b>Reason for deviation, if any with complete justification</b>

13	Item	UPS
	Certifications	ISO 9001 and 14001 Certified OEM
	Technology	Rectifier & Inverter both with IGBT based Microprocessor Processing Design, Double Conversion True On-line UPS
	Input Voltage & Range	172-290V AC ,Single Phase on full load
	Input Frequency Range	50 Hz ± 10%
	Input Phase	Single Phase with ground
	Input Power Factor	>=0.95 at full load
	Output	1/2/3 KVA for respective requirement
	Voltage	220 / 230 /240 VAC
	Output Frequency regulation	Free running Mode 50Hz ± 0.5Hz
	O/p Voltage Distortion	< 6% (Non-linear load)
		< 3% (linear load)
	Output Waveform	Pure Sine wave
	Battery Backup	180 minute
	Battery Type	Sealed lead maintenance free VRLA type
	Battery brand	EXIDE, PANASONIC, ROCKET, Quanta only

	VDC	Shall be 36VDC for 1Kva & 96VDC or more for 2/3Kva
	Battery Ratings (Min. VAH)	Min. 4000 VAH
	Noise level	<45 dB @ 1 Meter , EN 62040 – 2, 2006
	Protection	IP 20
	Bypass	Automatic Bypass Switch
	Surge Protection	External Transient Voltage Surge Suppressor at i/p of UPS of Surge capacity of 10kA with fast response time of <0.5nS alongwith monitoring LED
	DG Compatibility	UPS to be compatible with DG Set supply and mains supply
	Standard	RS 232 & USB port with software for monitoring & Shutdown of connected PCs.
	Alarms & Indications	All necessary alarms & indications essential for performance monitoring of UPS to be incorporated.
	LCD Display <b>Compliance</b>	Back-up time, Load, battery, Mode of operation, Fault <b>Yes / No</b> <b>Reason for deviation, if any with complete justification</b>

14	Item	LCD Projector
	LCD Size	0.63" with MLA
	native resolution	XGA
	Projection lens	Manual Optical Z: oom & Focus
	F number	1.51-1.99
	Focal length	18.2mm-29.2mm
	projection size	30"-300"
	White Light output	4500 lumens
	color light output	4500 lumens
	contrast	3000:1
	sound output	10 watt monoaural
	keystone correction	auto (+/- 30 degree Zoom:Tele) (Horizontal keystone Adjuster)
	Connectivity	
	D-Sub 15 Pin	1
	Component	D-sub 15pin (Blue molding) x 2 (in common with Analog RGB connector
	Composite	RCA (Yellow) x 1
	HDMI	1
	D-Sub 15pin (output)	1
	Audio Input Stereo Mini Jack	2
	Audio Output Stereo Mini Jack	1
	USB Type A	1
	USB Type B	1
	Control I/O	RS232C
	Network <b>Compliance</b>	Wired LAN <b>Yes / No</b> <b>Reason for deviation, if any with complete justification</b>

15	Item	Motorised Screen
	Size Maximum	110"
	Type	Motorised

		Wall Mounted
		Supplied with remote
		Anti Reflective
	<b>Compliance</b>	Hi Gain <b>Yes / No</b> <b>Reason for deviation, if any with complete justification</b>

<b>16</b>	<b>Item</b>	<b>Magnetic Board</b>
	Backdrop <b>Compliance</b>	Of actual size <b>Yes / No</b> <b>Reason for deviation, if any with complete justification</b>

<b>17</b>	<b>Item</b>	<b>Large Format Display</b>
	<b>Panel</b>	
	Monitor Type	55" LED with IPS Panel
	Aspect Ratio	16:09
	Native Resolution	1,920 x 1,080 (Full HD)
	Brightness	350cd/m2 or higher
	Contrast Ratio	1,100 : 1 or higher
	Dynamic CR	500,000 : 1 or higher
	Orientation	Portrait & Landscape
	Surface Treatment	Hard Coating, Anti-glare Treatment of the Front Polarizer
	Circuit board Protection	Dust & Humidity Protection Coated
	Viewing Angle (H x V)	178 x 178 degree
	<b>Connectivity</b>	
	Inputs	HDMI, DVI-D, RGB, Stereo Mini Jack, USB- 2 nos
	Outputs	Stereo Mini Jack, External Speaker Out
	External Control	RS232C (In/Out), RJ45, IR Receiver
	<b>Environment Conditions</b>	
	Operation Temperature	0 °C to 40 °C
	Operation Humidity	10 % to 80 %
	<b>Power Supply</b>	
	Power Supply	100-240V~, 50/60Hz
	Consumption	70W (Typ)/ 55W (SES)or more
	<b>Industrial Grade/ Certification</b>	
	Safety	UL / cUL / CB / TUV / KC
	EMC	FCC Class "A" / CE / KCC
	Energy Star	Yes energy star 6.0 .
	<b>Compliance</b>	<b>Yes / No</b>
	<b>Reason for deviation, if any with complete justification</b>	

<b>18</b>	<b>Item</b>	<b>Large Format Display</b>
	<b>Panel</b>	
	Monitor Type	65" LED with IPS Panel
	Aspect Ratio	16:09
	Native Resolution	1,920 x 1,080 (Full HD)
	Brightness	350cd/m2 or higher
	Contrast Ratio	1,100 : 1 or higher
	Dynamic CR	500,000 : 1 or higher

	Orientation	Portrait & Landscape
	Surface Treatment	Hard Coating, Anti-glare Treatment of the Front Polarizer
	Circuit board Protection	Dust & Humidity Protection Coated
	Viewing Angle (H x V)	178 x 178 degree
	<b>Connectivity</b>	
	Inputs	HDMI, DVI-D, RGB, Stereo Mini Jack, USB- 2 nos
	Outputs	Stereo Mini Jack, External Speaker Out
	External Control	RS232C (In/Out), RJ45, IR Receiver
	<b>Environment Conditions</b>	
	Operation Temperature	0 °C to 40 °C
	Operation Humidity	10 % to 80 %
	<b>Power Supply</b>	
	Power Supply	100-240V~, 50/60Hz
	Consumption	70W (Typ)/ 55W (SES)or more
	<b>Industrial Grade/Certification</b>	
	Safety	UL / cUL / CB / TUV / KC
	EMC	FCC Class "A" / CE / KCC
	Energy Star	Yes energy star 6.0 .
	<b>Compliance</b>	<b>Yes / No</b>
	<b>Reason for deviation, if any with complete justification</b>	

19	Item	Switcher Cum Scaler & Splitter
	<b>10-Input Analog &amp; HDMI Presentation Digital Scaler/Switcher with 2K Support and Ethernet Control</b>	HDTV Compatible.
		HDCP Compliant - The HDCP (High Definition Content Protection) license agreement allows copy-protected data on the HDMI input to pass only to the HDMI output.
		Multi-Standard - PAL & NTSC.
		Video Inputs - 4 HDMI, 2 computer graphics video on 15-pin HD connectors, 2 composite video & 2 component video on RCA connectors.
		Scaled Outputs - 1 HDMI, 1 RGBHV on BNC connectors, 1 VGA on a 15-pin HD connector, simultaneously.
		24 Output Resolutions - Up to UXGA/1080p and 2K.
		Companion AFV (Audio-Follow-Video) - Stereo audio for every input (on terminal blocks).
		Audio Inputs - 10 unbalanced stereo on terminal blocks, each with individual level controls.
		Audio Outputs - 1 S/PDIF & 1 unbalanced stereo audio on RCA connectors.
		Multiple Aspect Ratio Selections - Full, overscan, underscan, letterbox & panscan.
		Built-in ProcAmp - Color, hue, sharpness, noise, contrast & brightness.
		Front Panel Control - Audio mute, video blanking & freeze frame.
		Front Panel Lockout.
		Flexible Control Options - Front panel, IR remote with

		OSD (on–screen display), Ethernet & RS–232.
		Worldwide Power Supply - 100–240V AC. Standard 19” Rack Mount Size - 1U. Rack “ears” included.
	OUTPUT COLORSPACE	RGB.
	H FREQUENCY:	15.63–90kHz.
	V FREQUENCY:	50–100Hz.
	RGB SYNCs:	H and V TTL separated syncs.
	RGB LEVEL:	1.2Vpp max, 75W load.
	XGA OUT LEVEL:	1.2Vpp max, 75W load.
	OUTPUT RESOLUTIONS:	Native, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, 1280x800, 1440x900, 1400x1050, 1600x900, 2048x1080.
	OUTPUT REFRESH RATES :	60Hz for computer graphics resolutions; 50/60/59.94Hz (HDTV and 480i/p resolutions), 50/60Hz (2k 2048x1080 resolution), 50Hz (576i/p resolutions).
	CONTROLS:	CV 1, CV 2, component 1, component 2, PC 1, PC 2, HDMI 1, HDMI 2, HDMI 3, HDMI 4, input selector buttons; blank, mute, freeze buttons; menu, enter, menu arrows, reset to XGA/720p, lock buttons, RS–232, IR, Ethernet.
	POWER CONSUMPTION:	100–240V AC, 25VA max.
	OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F).
	STORAGE TEMPERATURE:	–40° to +70°C (–40° to 158°F).
	HUMIDITY: <b>Compliance Reason for deviation, if any with complete justification</b>	10% to 90%, RHL non–condensing. <b>Yes / No</b>

20	Item	HDMI Distribution Amplifier	
	<b>1:8 HDMI Distribution Amplifier for HDMI signals. It reclocks and equalizes the signal and distributes it to 8 identical outputs.</b>	10.2 Gbps (3.4 Gbps Per Lane)	
		HDTV Compatible.	
		HDCP Compliant.	
		HDMI Support - Deep Color, CEC.	
		3D Pass-Through	
		Plug-and-play – no software installation required	
		Active Output LED Indicators.	
		Power Consumption: DC 5V, 13 W	
		Built-in bi-directional RS-232 serial control port for high-end system control	
		Standard 19” Rack Mount Size - 1U. Rack "ears" included.	
		INPUT:	1 HDMI connector.
		OUTPUTS:	8 HDMI connectors.
		BANDWIDTH:	10.2 Gbps (3.4 Gbps Per Lane)
	COMPLIANCE WITH HDMI STANDARD:	Supports HDMI and HDCP.	

	CONTROLS:	Connector: 1 x DB-9 Female (Black)
	OPERATING TEMPERATURE:	0-50 °C
	STORAGE TEMPERATURE:	-20 - 60 °C
	HUMIDITY:	0 - 80% RH, Non-Condensing
	POWER CONSUMPTION: <b>Compliance</b> <b>Reason for deviation, if any with complete justification</b>	5 VDC, 14.84W <b>Yes / No</b>

<b>21</b>	<b>HDMI &amp; IR over Twisted Pair Transmitter</b>	
	<b>FEATURES</b>	
	Max Data Rate – 10.2Gbps.	
	HDTV Compatible.	
	HDCP Compliant.	
	Bi-directional RS-232 channel – allows you to connect to serial terminals or serial devices, such as touch screens and barcode scanners	
	Bi-directional IR Support - 3.5mm.	
	System Range - Up to 4K@35m (Cat 5e/6) / 40m (Cat 6a); 1080p@60m (Cat 5e/6) / 70m (Cat 6a)	
	Cable - Uses 1 UTP (unshielded twisted pair) or STP (shielded twisted pair) CAT 5 cables.	
	Passes EDID (Extended Display Identification Data).	
	HDBaseT Anti-jamming – resists signal interference during high-quality video transmission using HDBaseT technology	
	Power (Green)/Link (Orange) Status LED.	
	POH (Power over HDBaseT) – supplies power from Transmitter to Receiver over a long distance via one Cat 5e/6/6a cable	
	INPUTS:	1 HDMI connector.
	OUTPUTS:	1 CAT5 OUT on RJ-45 connectors.
	IR PORT:	Bi-directional on a 3.5mm mini jack.
	BANDWIDTH:	Supports up to 10.2Gbps bandwidth per graphic channel.
<b>Compliance</b>	POWER SOURCE: DC5V, 3.6W	
	<b>Yes / No</b>	
	<b>Reason for deviation, if any with complete justification</b>	

<b>22</b>	<b>HDMI &amp; IR over Twisted Pair Receiver</b>	
	Max. Data Rate - 10.2Gbps (3.4Gbps per lane)	
	HDTV Compatible.	
	HDCP Compliant.	
	Bi-directional RS-232 channel – allows you to connect to serial terminals or serial devices, such as touch screens and barcode scanners	
	Bidirectional IR Support.	
	Optional IR Emitter Cables	
	Optional External IR Receiver Cable.	
	EDID PassThru - Passes EDID signals between the source and display.	
	HDBaseT Anti-jamming – resists signal interference during high-quality video	

	transmission using HDBaseT technology
	Status LEDs - Power (Green)/Link (Orange)
	POH (Power over HDBaseT) – supplies power from Transmitter to Receiver over a long distance via one Cat 5e/6/6a cable
	<b>TECHNICAL SPECIFICATIONS</b>
	INPUTS: 1 CAT 5 IN on RJ-45 connectors.
	OUTPUTS: 1 HDMI connector.
	IR PORT: Bidirectional on a 3.5mm mini jack.
	BANDWIDTH: 10.2Gbps (3.4Gbps per lane)
<b>Compliance</b>	POWER CONSUMPTION: DC5V, 4W
	Yes / No
	<b>Reason for deviation, if any with complete justification</b>

<b>23</b>	<b>All HDMI Cable</b>	
	Low Smoke, Halogen Free, High Speed with Ethernet, 1.4a	
	24Ct Gold Plated contacts	
	3 Fold Shielding	
	Conductor based on high purity copper	
	Ethernet Network (up to 100 Mbit)	
	Audio Return Channel	
	3D-Video	
	Additional Color Spaces	
	Content Type	
	2160p (4K x 2K Video)	
	1080p (Full HD)	
	1080i/720p	
	Data rate up to 10.2 Gbit/s (340 Mhz bandwidth)	
	Deep Color multi-bit; x.v.Color	
	HDMI® 2.0 compatible	
	HD Audio: DTS™ HD, Dolby® True HD, Dolby® Digital Plus, PCM, DVD Audio, SACD	
	Up to 8 Audio-channels (24 Bit /192 kHz)	
	Lip sync: automatic synchronisation between picture and sound	
	2160p (4K x 2K Video)	
	Data rate up to 10.2 Gbit/s (340 Mhz bandwidth)	
	Deep Color multi-bit; x.v.Color	
	HDMI® 2.0 compatible	
	HD Audio: DTS™ HD, Dolby® True HD, Dolby® Digital Plus, PCM, DVD Audio, SACD	
	Up to 8 Audio-channels (24 Bit /192 kHz)	
	Lip sync: automatic synchronisation between picture and sound	
<b>Compliance</b>	Yes / No	
	<b>Reason for deviation, if any with complete justification</b>	

<b>24</b>	<b>Data Cable</b>	
	Construction	four shielded twisted pairs of 23SWG solid copper conductors
	Jacket	Unshielded

	Shield Material	100% aluminum foil, 25% overlap.
	Min bed radius	35mm
	Drain Wire	Solid 23AWG tinned copper
	Outside Diameter	7.6mm nominal
	<b>Electrical</b>	
	PROPAGATION DELAY SKEW	45ns/100m max
	IMPEDANCE	100Ω
	DC RESISTANCE	48Ω/km (13.8Ω/1000ft) nominal.
	MAX. RESISTANCE UNBALANCED	2%
	CAPACITANCE	1.2pF/m max
	TEMPERATURE	-20° to +70°C (-4° to 158°F)
	<b>Compliance Reason for deviation, if any with complete justification</b>	<b>Yes / No</b>

25	<b>Camera</b>	
	<b>Features</b>	<b>Description</b>
	Image Sensor	1/3" Super HADII CCD
	Signal System	PAL/ NTSC
	Synchronizing System	Internal
	Horizontal Resolution	700TVL
	Lens	2.8-12mm
	IR LED	42PC IR LED
	Min. Illumination	0.01LUX/ F1.2
	Focus mode	Manual
	Electronic Shutter	1/50s(1/60s)-1/100,000s (Auto/ Fixed)
	Exposure	Auto
	Gamma Correction	0.45
	White Balance	ATW / PUSH / PUSH-LOCK / MANUAL / Indoor / Outdoor
	S/N Ratio	≥52dB
	AGC	Auto / Manual, 8 Levels
	BLC	Backlight Compensation , Highlight Suppression , Digital Wide Dynamic Range
	Motion Detection	4 zones, set position and size freely
	Control Mode	OSD Menu, support 8 languages
	Video Output	1.0Vp-p Composite Output (75Ω / BNC)
	IR Light Wavelength	850nm
	IR Distance	30~40m
	Day & Night	Auto, Manual
	Indoor / Outdoor	IP 65
	Working Current	Max. 120mA+300mA (with IR on)
	Power Supply	DC12V (+/-10%)
	Working Temperature	-20°C~+50°C
	Working Humidity	≤95% RH non-condensing
	<b>Compliance Reason for deviation, if any with complete justification</b>	<b>Yes / No</b>



	<b>any with complete justification</b>	
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<b>26</b>	<b>DVR</b>	
	<b>Parameter</b>	<b>Feature</b>
	Live View Resolution	4 CIF PAL VGA 1024 X 768
	Storage	1 TB
	No of Channels	4
	Video Compression	H. 264
	Recording Resolution	8CIF
	VGA & HDMI Output	1 -CH , Resolution 1024*768 / 60Hz
	Video Inputs	BNC
	Power Source	DC 12V
	Power Consumption	36 W ( With HDD)
	Ambient Operating Temperature	0 °C ~ +50 °C
	Ambient Operating Humidity	10% ~ 90
	<b>Compliance</b>	<b>Yes / No</b>
	<b>Reason for deviation, if any with complete justification</b>	

<b>27</b>	<b>Video Conferencing System</b>	
	<b>Parameter</b>	<b>Feature</b>
	Package	<ul style="list-style-type: none"> <li>• FHD Video codec</li> <li>• FHD PTZ camera</li> <li>• Mic Array (2x Mic)</li> <li>• Remote control</li> <li>• Cloud Meeting Room subscription (one year)</li> <li>• Power supplies, cables and accessories</li> <li>• 4-way Embedded SIP/H.323 MCU license</li> <li>• Wireless presentation &amp; collaboration (1-user license)</li> <li>• Two-year warranty with support and maintenance included</li> </ul>
	Video Standards and Resolutions	H.323 / SIP ITU Standards Transmission Speed : 64Kbps - 6Mbps
		<ul style="list-style-type: none"> <li>• Resolution up to 1080p @ 60 fps</li> <li>• H.261, H.263, H.263+/++</li> <li>• H.264/AVC High Profile – up to 6Mbps</li> </ul>
	Content Standards and Resolutions	Support HD Data Sharing at 1080p Resolution using H.239 ITU Standard. System shall be supplied with 4-user wireless

		<p>presentation and shall be upgradeable to 6users with software license.</p> <p>System shall have capability to stream content live to remote viewers and record in-room wireless presentations along with video and audio for future on-demand archiving and access.</p> <p>System shall support different layout options such as Full screen, Mosaic Tile Layout.</p> <p>Shall have the capability to beam the presentation to participants own devices giving freedom to watch in their preferred layouts.</p> <p>System shall have capability to generate dynamic access codes keep the meeting secure, and control what to share on-screen, ensuring nothing private is accidentally revealed.</p>
		It should support content resolution at 1080p 30fps
		It should also support audio from PC used for content sharing.
		It should transmit both people and content both simultaneously to the far end location at 1080p 30fps
	Audio Standards and Features	<ul style="list-style-type: none"> <li>• 20KHz: AAC-LD</li> <li>• 14KHz: G.722.1 Annex C</li> <li>• 7KHz: G.722, G.722.1</li> <li>• 3.4KHz: G.711, G.723.1, G.728. G.729. AMR (3G)</li> </ul>
		<p>Full duplex echo cancellation</p> <p>Automatic Noise suppression (ANS)</p> <p>Automatic gain control (AGC)</p> <p>Voice Activity Detention (VAD)</p>
	Video and Audio Inputs	2x HDMI, 2x USB 3.0,
		Balanced audio, USB, Line in
	Data Inputs	HDMI, Wireless, USB
	Video and Audio Outputs	Dual HD Output (DVI or HDMI); Dual Display support
		Balanced audio, Line out, HDMI
	Other Interfaces	2 x 10/100/1000 LAN port
		2 x RS-232 mini-DIN 8-pin
	Camera	<p>12x Optical zoom, f=3.9~47mm</p> <ul style="list-style-type: none"> <li>• 73° wide-angle view with auto-focus</li> <li>• USB 3.0 and DVI-I output</li> <li>• Full HD 1080p 60fps</li> <li>• Control: Remote control, USB (UVC), RS-232</li> <li>• Pan/Tilt Angles: ±170°, Tilt: -30° to +90°</li> </ul>
	Network Features	H.323 and SIP bandwidth up to 6 Mbps
		IPv4 support from day one and Upgradable to IPV6 by Software/Firmware Upgrade
		Diff Serv
		IP Precedence
		Firewall Port Sync
		Port pinholing NAT IP address mask
		Packet loss recovery (FEC)ss
		Adaptive Bandwidth Adjustment
		Overhead prediction Lip sync correction
		Max packet size adjustment
	Multisite Feature	It should support atleast 4 sites at 1080p from Day one

		and upgradable to 9 way with additional License.
	Security	H.235 AES and NAT
		Authenticated access to admin menus, web interface and telnet API
		Local account password policy configuration
	Other Standards	H224/H.281, H.323 Annex Q, H.225, H.245, H.241, H.239, H.243, H.460
		Auto sensing power supply
		100-240 Volts,50-60 60Hz
	Additional Camera Features	+ Support for USB 3.0, USB 2.0, HDMI, and IP connections + Simultaneous video output to USB, HDMI, and IP streaming + Flexibility to control the camera's Pan, Tilt, and Zoom functions via RS-232 or USB (UVC) or IP-based web management + Supports H.264 and H.265 encoding, enabling 1080p@60fps video stream at ultra-low bandwidth + RTSP streaming via unicast & multicast + Line-in interface to stream audio
	<b>The proposed system must support PAL with a PTZ camera. The codec must be based on ITU standards The VC End Point should be a codec based hardware. No software based solution is accepted here. All components of the VC system like Codec, Camera and Microphone should be from the same OEM.</b>	
<b>Compliance</b>	<b>Yes / No</b>	
	<b>Reason for deviation, if any with complete justification</b>	

<b>28</b>	<b>Switching &amp; Connectivity</b>	
<b>Compliance</b>	<b>Yes / No</b>	
	<b>Reason for deviation, if any with complete justification</b>	

**SECTION VIII:**

**BID FORM AND PRICE SCHEDULE**

**Date**

.....

TO: (Name and address of purchaser)

Gentlemen and/or Ladies :

Having examined the Bidding Documents including Addenda Nos.....  
[insert numbers], the receipt of which is hereby duly acknowledged, we, the

undersigned, offer to supply and deliver.....  
(Description of EQUIPMENTS) in conformity with the said bidding documents  
The Schedule of Prices is attached herewith and made part of this bid.

We undertake, if our bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to 10% of the Contract Price for the due performance of the Contract, in the form prescribed by the Purchaser.

We agree to abide by this bid for the Bid validity period specified in Clause 16.1 of the Bid Data Sheet and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

We understand that you are not bound to accept the lowest or any bid you may receive.

We clarify/confirm that we comply with the eligibility requirements as per ITB Clause 1 of the bidding documents.

Dated this ..... day of ..... 19 .....

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(signature)

(in the capacity of)

Duly authorized to sign Bid for and on behalf of

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PRICE SCHEDULE for Lab Package -----

## SECTION VIII A:

## SCHEDULE OF COST BREAK UP

Audio Visual Equipments for auditorium of I.G.S.C. Planetarium, Patna

Sl. No.	Name of Equipment	Qty.	Rate	Amount	Applicable Tax	Total
<b>Audio Component</b>						
01	Wireless Gooseneck Microphone	03				
02	Wireless Handheld Microphone	02				
03	Wireless Lapel Microphone	01				
04	Wall Mount Speaker (Type A)	06				
05	Wall Mount Speaker (Type B)	03				
06	Amplifier	01				
07	Mixer	01				
08	Acoustic Rack	01				
09	Audio cable	150				
10	Microphone cable	50				
11	Digital Lectern	01				
12	Wireless Presentation Gateway with an iPad	01				
<b>Video Component</b>						
13	UPS 3 KVA with 30 minutes backup	01				
14	LCD Projector	01				
15	Motorized Screen	01				
16	Magnetic Board	01				
17	Large Format Display 46"	03				
18	Large Format Display 65"	01				
19	Matrix Switcher	01				
20	HDMI Distribution Amplifier	01				
21	HDMI & IR Over Twisted Pair Transmitter	02				
22	HDMI & IR Over Twisted Pair Receiver	02				
23	HDMI Cable 2 mts	06				
	HDMI Cable 5 mts	02				
	HDMI Cable 15 mts	02				
24	Shielded twisted pair cable	75				
25	Camera	02				
26	DVR	01				
27	HD Video Conferencing System	01				
28	Switching & Connectivity	01				

**SECTION IX:**

**BID SECURITY FORM**

Whereas .....<sup>1</sup> (*hereinafter called "the Bidder"*) has submitted its bid dated ..... (*date of submission of bid*) for the supply of ..... (*name of the Equipments*) (*hereinafter called "the Bid"*).

KNOW ALL PEOPLE by these presents that WE ..... (*name of bank*) of ..... (*name of country*), having our registered office at ..... (*address of bank*) (*hereinafter called "the Bank"*), are bound unto ..... (*name of Purchaser*) (*hereinafter called "the Purchaser"*) in the sum of \_\_\_\_\_ for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_ day of \_\_\_\_\_ 20\_\_.

THE CONDITIONS of this obligation are:

1. If the Bidder
  - (a) withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
  - (b) does not accept the correction of errors in accordance with the ITB; or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity:
  - (a) fails or refuses to execute the Contract Form if required; or
  - (b) fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders;

we undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including sixty (60) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the Bank)

\_\_\_\_\_  
*Name of Bidder*

**SECTION X:**  
**CONTRACT FORM**

THIS AGREEMENT made the .....day of....., 20...  
Between ..... (*Name of purchaser*) of ..... (*address of Purchaser*) (hereinafter called "the Purchaser") of the one part and ..... (*Name of Supplier*) of ..... (*address of Supplier*) (hereinafter called "the Supplier") of the other part :

WHEREAS the Purchaser is desirous that certain Goods and ancillary services viz., ..... (*Brief Description of Goods and Services*) and has accepted a bid by the Supplier for the supply of those goods and services in the sum of ..... (*Contract Price in Words and Figures*) (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
  - (a) the Bid Form and the Price Schedule submitted by the Bidder;
  - (b) the Schedule of Requirements;
  - (c) the Technical Specifications;
  - (d) the General Conditions of Contract;
  - (e) the Special Conditions of Contract; and
  - (f) the Purchaser's Notification of Award.
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the



Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the goods and services which shall be supplied/provided by the Supplier are as under:

---

SL.	BRIEF	QUANTITY TO	UNIT
	Total	DELIVERY TERMS	
NO.	DESCRIPTION OF	BE SUPPLIED	PRICE
	GOODS & SERVICES		

TOTAL VALUE:

DELIVERY SCHEDULE:

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the

said ..... (For the Purchaser)

in the presence of:.....

Signed, Sealed and Delivered by the

said ..... (For the Supplier)

in the presence of.....

**SECTION XI:**  
**PERFORMANCE SECURITY FORM**

To: (Name and a of Purchaser)

WHEREAS ..... (Name of Supplier)

hereinafter called "the Supplier" has undertaken , in pursuance of Contract (Notification of Award) No..... dated,..... 20... to supply.....(Description of Goods and Services) hereinafter called "the Contract".

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a Nationalized/scheduled bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of ..... (Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limit of ..... (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the .....day of.....20.....

Signature and Seal of Guarantors

Date.....20

Address:.....

**SECTION XII**

(Please see Clause 13.3(a) of Instructions to Bidders)

**MANUFACTURERS' AUTHORIZATION FORM\***

No. \_\_\_\_\_ dated \_\_\_\_\_

To \_\_\_\_\_

Dear Sir:

Bid Reference No.-----, name of package-----,

We \_\_\_\_\_ who are established and reputable manufacturers of \_\_\_\_\_ (*name and description of goods offered*) having factories at \_\_\_\_\_ (*address of factory*) do hereby authorize M/s \_\_\_\_\_ (*Name and address of Agent*) to submit a bid, and sign the contract with you for the goods manufactured by us against the above BR No.

No company or firm or individual other than M/s \_\_\_\_\_ are authorized to bid, and conclude the contract for the above goods manufactured by us, against this specific IFB. (*This para should be deleted in simple items where manufacturers sell the product through different stockists.*)

We hereby extend our full guarantee and warranty as per Clause 14 of the General Conditions of Contract and Clause 9 of the Special Conditions of Contract for the goods and services offered for supply by the above firm against this IFB.

Yours faithfully  
(Name)

(Name of manufacturer)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to legally bind the manufacturer. It should be included by the Bidder in its bid.

\* Modify this format suitably in case where manufacturer's warranty and guarantee are not applicable for the items for which bids are invited.