

**INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR – 721 302, INDIA**

No. IIT/EE/ENQ-8/KB(INST)/2019-20 Date: 26-08-2019

Sub: Procurement of Lock in amplifier

Indian Institute of Technology, Kharagpur, an Institute of National Importance invites sealed bids from reputed manufacturer or their authorised Distributor/Dealer (foreign firms or their Indian Representative company) who have adequate credential for supply of **Lock in amplifier** as per Annexure – I for the **Department of Electrical Engineering , Indian Institute of Technology, Kharagpur, India**. These items are required for dedicated use in relevant UG and PG laboratory courses and research purposes.

Interested parties may submit their sealed bids under Two-Bids system as per **Technical Specifications** given at **Annexure I**, and **General Terms & Conditions and Special instructions** given at **Annexure II and Annexure III**. Bidders are required to submit their **Details** in the format given at **Annexure IV** along with their technical bids. They are also required to submit a signed **Declaration** in the format given at **Annexure V**. A **Checklist** and **Compliance statement** against each item of Annexure I-III thereon severally and individually shall also be submitted. Kindly refer to the Institute website www.iitkgp.ac.in [**link: Tenders**] for complete tender details.

The tender be sent in a sealed packet, containing two separate sealed envelopes (one each for **Technical Bid and Price Bid**) along with **prescribed Earnest Money Deposit (EMD)** duly superscripted with Tender Notice No. IIT/EE/ENQ-8/KB(INST)/2019-20 Date: 26-08-2019 to the **Office of the Electrical Engineering Department, Indian Institute of Technology Kharagpur, P.O. Kharagpur Technology, PIN 721302, West Bengal, India on or before 30.09.2019 by 3.30 pm**.

For any query pertaining to this bid document, communication be address to **Dr. D. Kastha Department of Electrical Engineering, Indian Institute of Technology Kharagpur-721302 [Ph: 913222-283058.], email: kastha@ee.iitkgp.ernet.in**.

The Technical bids will be opened on **30.09.2019 at 4.00 pm** in Office of **Electrical Engineering Department, Indian Institute of Technology Kharagpur-721302**. The technical bid will be evaluated first and price bids will be opened in respect of those OEMs/Vendors, who are found technically qualified after evaluation of Technical bids.

Prof. P. K. Dutta

Head, Dept. of Electrical Engineering / Head
FOR DIRECTOR IIT, KHARAGPUR
Head of Electrical Engineering
Department / IIT Kharagpur
Website.

Copy to : 1. PIC, IIC – with request to upload the document in the Institute Website.

ANNEXURE – I

TECHNICAL SPECIFICATION

SI No.	Description of Stores	Quantity
1.	Lock in Amplifier	1 No.

Detailed Technical Specification:

Signal Channel		Phase drift	<0.01°/°C below 10kHz, <0.1°/°C above 10kHz
Voltage inputs	Single-ended or differential	Harmonic detection	2F, 3F, ... nF to 102kHz (n < 19,999)
Sensitivity	2nV to 1V	Acquisition time	(2 cycles+5ms) or 40ms, whichever is larger
Current input	10 ⁶ or 10 ⁸ V/A	Demodulator	
Input impedance		Stability	Digital outputs and display: no drift Analog outputs: <5ppm/°C for all dynamic reserve settings
Voltage	10MΩ+25 pF, AC or DC coupled	Harmonic rejection	-90dB
Current	1kΩ to virtual ground	Offset/Expand	±100% offset, expand up to 256x
Gain accuracy	±1% (±0.2% typ.)	Time constants	10μs to 30ks (6, 12, 18, 24dB /oct roll off). Synchronous filters available below 200Hz.
Noise (typ.)	6nV/VHz at 1kHz 0.13pA/VHz at 1kHz (10 ⁶ V/A) 0.013pA/VHz at 100Hz (10 ⁸ V/A)	Internal Oscillator	
Line filters	50/60Hz and 100/120Hz (Q=4)	Range	1mHz to 102kHz
CMRR	100dB to 10kHz, decreasing by 6dB/oct above 10kHz	Frequency accuracy	25ppm+30μHz
Dynamic reserve	>100dB (without prefilters)	Frequency resolution	0.01% or 0.1mHz, whichever is greater
Stability	<5ppm/°C	Distortion	-80dBc (f<10kHz), -70dBc (f>10kHz) @ 1Vrms
Reference Channel		Amplitude	0.004 to 5Vrms into 10kΩ (2mVresolution),
Frequency range	0.001Hz to 102.4kHz		
Reference input min.)	TTL or sine (400mVpp)		
Input impedance	1MΩ, 25pF		
Phase resolution	0.01° front panel, 0.008° through computer interfaces		
Absolute phase error	<1°		

Relative phase error	<0.001°	Output impedance	50Ω
Orthogonality	90°±0.001°	Amplitude accuracy	1%
Phase noise		Amplitude stability	50ppm/°C
Internal ref.	Synthesized, <0.0001°rms at 1kHz	Outputs	Sine, TTL (When using an external reference, both outputs are phase locked to the external reference.)
External ref.	0.005° rms at 1kHz (100ms time constant, 12dB/oct)	Sweeps	Linear and log
Displays		Data buffer	should have 16k point buffer. Data is recorded at rates to 512 Hz and read through the computer interfaces.
Channel 1	4½-digit LED display with 40-segment LED bar graph. X, R, X-noise, Aux 1 or Aux 2. The display can also be any of these quantities divided by Aux 1 or Aux 2.	Trigger in (TTL)	Trigger synchronizes data recording
Channel 2	4½-digit LED display with 40-segment LED bar graph. Y, θ, Y-noise, Aux 3 or Aux 4. The display can also be any of these quantities divided by Aux 3 or Aux 4.	Remote preamp	Provides power to the optional SR55X preamps
Offset	X, Y, R can be offset up to ±105% of full scale.	General	
Expand	X, Y, R can be expanded by 10× or 100×	Hardcopy	Screen dumps to dot-matrix or LaserJet printers. Plots to HP-GL plotters (RS-232 or GPIB).
Reference	4½-digit LED display	Disk drive	USB drive. Storage of data and instrument setups (binary or ASCII). Screens can be saved as PCX files.
Inputs and Outputs		Power	60W, 100/120/220/240VAC, 50/60H
CH1 output	X, R, X-noise, Aux 1 or Aux 2 (±10V), updated at 512Hz.	Warranty	3 years
CH2 output	Y, θ, Y-noise, Aux 3 or Aux 4 (±10V), updated at 512Hz.		
X, Y outputs panel)	In-phase and quadrature (rear components (±10V), updated at 256kHz		
Aux. A/D inputs	4 BNC inputs, 16-bit, ±10V, 1mV resolution, sampled at 512Hz		

GENERAL TERMS AND CONDITIONS

(1) Last Date of Submission of Sealed Bids (both technical and price bids, separately): 30-9-2019 up to 3.30 pm.

The Technical bids will be opened on 30.09.2019 at 4.00 pm in the Office of the Electrical Engineering Department, I.I.T. Kharagpur, India.

(2) Payment Terms & Performance Guarantee: 90% payment will be made on submission of shipping documents and balance 10% payment will be made on installation, commissioning and submission of PBG for performance period if the payment is made by LC, otherwise after receipt of stores by any other payment mode. The security deposit so retained may be refunded on submission of Bank Guarantee towards Performance Guarantee valid for the **warranty period plus sixty days** drawn on any commercial bank.

No advance/mobilization support, is payable against supply of stores.

In the event of failure to deliver the stores beyond the specified date, liquidated damages @ 1% per month or part thereof in respect of the value of stores will be deducted, subject to a maximum of 5%; alternately the order will be cancelled and the undelivered stores purchased from elsewhere at the risk and expense of the vendor.

(3) Warranty/Guarantee: Minimum **one year** onsite comprehensive OEM warranty from the date of successful installation and commissioning.

(4) Delivery of Stores: The store items be supplied within 30 days from the date of receipt of the Purchase Order or from opening of LC whichever is later.

(5) Earnest Money Deposit (EMD): An amount of **INR 10,000** (Rupees ten thousand only) in the form of Demand Draft drawn in favour of **“Indian Institute of Technology Kharagpur”**, payable at Kharagpur or Fixed Deposit Receipt or Banker's Cheque to be obtained from the Bidders. **E.M.D. should be enclosed separately in an envelope and stapled with the Technical Bid document superscribing EMD.** The bid security (EMD) is normally to remain valid for a period of 45 days beyond the final bid validity period. **Any bid without EMD will summarily be rejected. No interest is payable on EMD.** EMD will be **refunded** to the unsuccessful bidder on finalization of the tender process. The EMD of vendor awarded with the contract to be treated as part of security deposit towards Performance Guarantee and will be refunded back on submission of performance security. No interest is payable on Security Deposit. Security Deposit shall be forfeited if the selected vendor after award of contract fails to execute the same.

(6) Price: Domestic tenders are to quote and accept their payment in Indian currency. Indian agents of foreign suppliers are to receive their agency commission in Indian currency. Cost of imported goods, which are directly imported against the contract, may quote in foreign currency (currencies) and will be accordingly in that

currency and the portion of the allied work and services, which are to be undertaken in India (like installation & commissioning of equipment) are to be quoted and will be paid in Indian currency. The price shall be quoted with cost break-up indicating the applicable prices for each component (custom duty, import duty, landing and clearing charges and commission to Indian agents). Excise Duty Exemption/Custom Duty Exemption Certificate and Inter-state transit Way Bill (Form-50) will be issued only in favour of the bidder and address as mentioned in the Purchase Order.

(7) **Bid:** Technical Bid and Price Bid should be submitted in two separate sealed envelope quoting reference number on the top of the envelope. EMD should be enclosed with the Technical Bid documents, in separate sealed envelopes, stapled with the packet containing Technical Bid documents. The OEMs may either bid directly or Country/Regional/State Distributors /Dealers/Vendors, to quote authorized with valid authorization certificate, capability to sale and service of the products.

(8) **Acceptance of Tender:** The Authority of IIT Kharagpur does not bind itself to accept the lowest priced bid and reserves the right to reject any or the entire tender bids received without assigning any reason thereof.

(9) **Extra Features:** If the bidder provides any other extra features on the Hardware or Software which are not mentioned in the tender product specifications, then that shall be highlighted in clear terms, with documentary evidence/literature.

(10) **Compliance List:** The proposal be properly indexed and a compliance list against the technical specifications should be provided.

(11) **Service:** Response to ensure quality of services, the deputed Engineer from the OEM/Vendor shall have a minimum of 3 years of experience in the relevant field and must be in the payroll of the OEM/Vendor.

(12) **Installation and Commissioning:** Free of cost at IIT, Kharagpur. The OEM must ensure timely installation of the items(s) with necessary support to the indenters, as per details and lists to be made available by the Stores & Purchase Section or the indenting Departments/Centres/Schools.

(13) **Validity of licenses:** Software's licensing price or policy (if any) shall be clearly mentioned.

(a) All licenses should be perpetual

(b) All the accessories shall be from the same OEM

(14) The OEM should be an ISO-9000 certified company.

(15) **Relevant documents of the OEM shall be enclosed, along with the Technical Bid. Any explanation on this account shall be supported with documentary evidence from the principals.**

(16) **Conditional Offer will not be accepted.**

(17) **Period of Validity:** Bids shall remain valid for acceptance for a period of 120 days from the date of opening of the price bid.

(18) The benefit of any downward price revision (revision on account of budget/financial policy, tax revision, EPZ etc.) is to be given to IIT Kharagpur by the selected OEM/vendor.

(19) **Past Performance of the Vendors will be judged at the time of Technical Evaluation.**

(20) **The Institute does not bind** itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee of the Institute.

(21) Bidders should enclose the following documents:

(i) Certificate of Registration / Trade License

(ii) Enlistment form (R1), complete in all respect

(iii) Attested copy of PAN card, Service Tax, CST/VAT registration papers

(iv) Audited statement of accounts and IT returns for the last three years

(v) Authorized Distributors/Vendors must submit appropriate authorization certificate and letter from their OEMs, for participation in the said tender.

(vi) Name and address of past satisfactory supplies or minimum three clients to whom such items/stores have been supplied should be mentioned in the technical bid.

(vii) Copy of product literature, for which the prices have been quoted.

(viii) Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration should be provided.

(ix) DGS&D enlistment certificate needs to be attached (applicable only for Indian Agents)

(22) **All tenders are to** be handed over in a sealed box in the office of the Department of Electrical Engineering, IIT Kharagpur. The bids (technical and price bids) once submitted shall be the property of the Institute and shall not be returned to the vendor in future.

(23) **The person/officer signing** the tender/bid documents should be delegated with an appropriate Power of Attorney (duly endorsed by a Notary Public) by the Chief Executive Office/Managing Director of the Company to sign such documents.

(24) **Opening of Price Bids:** The Price Bid(s) of only those vendor(s) who are found technically qualified will be opened and the same will be opened before the technically qualified vendor(s). **The date for opening of price bids will be notified separately.**


(25) Tenderer or his/her authorized representative (with proper authorization letter for attending opening of technical bids and also for opening of price bids) may choose to be present at the time of opening of Technical Bids/Price Bids.

(26) **IMPORTANT**

1. Director may accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid. The Institute at its discretion may change the quantity/upgrade the criteria/drop any item or part thereof at any time before placing the Purchase Order.
2. A bid submitted with false information will not only be rejected but also the OEM/ vendor will be debarred from participation in future tendering process.
3. The OEMs/Vendors need to submit a certificate during opening of technical bids that they are not currently debarred or blacklisted in IIT Kharagpur for any supplies, products or services, or at present in any national organization or educational institute/ university.
4. In case of any dispute, the decision of the Director of this Institute shall be final and binding on the bidders.
5. For any query pertaining to this bid document, correspondence be addressed to :

Dr. Debaprasad Kastha
Department of Electrical Engineering,
Indian Institute of Technology Kharagpur- 721302,
West Bengal, India
[Ph:03222-283058, email: kastha@ee.iitkgp.ernet.in]

6. In case the due date for opening tender happens to be a holiday, the same will be opened on the next working day. The timings will however remain unchanged. Please Note that the Institute remains closed on Saturday & Sunday.


Prof. P. K. Dutta

Head, Department of Electrical Engineering / Head
For Director, IIT Kharagpur
Dept. of Electrical Engineering
भा प्रो सं खड़ापुर/IIT Kharagpur

INSTRUCTIONS & SPECIAL CONDITIONS

(To be returned by Tenderer along with the Tender duly signed)

1. **GENERAL:** *Tenderer(s), who are Indian Agents of OEMs should furnish a clear declaration as follows: We declare that I am/we are Accredited Agents of the suppliers aboard. **DGS&D enlistment certificate needs to be attached (applicable only for the Indian Agents)***

2. **DEVIATION FROM SPECIFICATIONS:**

It is in the interest of the tenderer to study the specifications in the tender schedule thoroughly before quoting so that, if the tenderer makes any deviations, the same are prominently brought out in the body of the tender. If you need to add any optional items to your system in order to meet our specifications, you are requested to quote for the total including the option required to suit our requirements. Otherwise, your tender will not be considered at all.

3. **PRICE:**

For imported items both F.C.A./F.O.B. & C.I.F. Kolkata price by Air/Sea to be quoted. The price should be without Customs Duty and Excise Duty since IIT Kharagpur is exempted from the payment of Customs & Excise Duties. The Institute, if required will provide certificates for Import Items: The order acknowledgement should be issued by Fax within 3 days, and the item should be airlifted/boarded in sea within 30 days from the date of receipt of the Letter of Credit/copy of DD, as the case may be.

(i) Agency Commission, if any will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances.

(ii) The unit prices should be for the same unit as indicated in the Schedule to tender enquiry and not for any other unit.

(iii) Prices quoted should be for supply, installation and commissioning at I.I.T. Kharagpur.

(iv) Discount, if any, should be indicated separately / prominently.

(v) Offers should normally be on fixed and firm price basis. Any clause making price variation will not be acceptable.

*(vi) Where tenderer intends to quote in Indian Rupees, for imported items, the price should be quoted "FOR Destination" basis. Offer should be on "High Sea Sales" basis. No sale tax can be charged. Customs Duty applicable against **Declaration in Terms of Government of India Notification No.51/96-Customs dated 23.07.96 will be paid. Vendor will arrange payment of customs duty during clearance and the same will be reimbursed at actual against proper documents. Way Bill will be issued on request.** Seller has to undertake the responsibilities of customs clearance. All necessary supporting documents will be provided by the IIT Kharagpur. An agreement can be made in this regard, if the seller wishes, before customs clearance.*

4. **TRANSIT INSURANCE:**

The Purchaser will not pay separately for Transit Insurance.

5. PAYMENT:

(i) Payment for indigenous items and also imported items quoted in Indian Rupees will be made only after completion of supply, installation and commissioning of the Systems to the entire satisfaction of the Purchaser. No Advance Payment will be made for Indigenous Purchase.

(ii) Where items are imported and the payment is desired to be made to their foreign Principals directly, the same will be made against Irrevocable Letter of Credit only.

6. TENDERERS SHALL SUBMIT ALONG WITH THEIR TENDER:

(i) Complete address and tele links for contact persons in principals and Indian agent offices dealing with this purchase.

(ii) Name and full address of the OEM's Banker and their swift code.

(iii) Proof of having ISO 9001 or other equivalent certification given by appropriate authorities.

(iv) If payment is made through LC, then LC opening charges inside and outside India, who will have to bear to be clearly mentioned

(v) Country of origin is to be provided for each item.

7. EARNEST MONEY DEPOSIT: tenderer must submit an EMD of INR 15,000 (Rupees Fifteen thousand only) (REFUNDABLE) IN THE FORM OF BANK DRAFT/BANERS' CHEQUE IN FAVOUR OF "INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR". It should be placed in the cover containing of Technical Bid.

8. PERFORMANCE BANK GUARANTEE:

On behalf of the Principal, Indian Agent must be able to provide Performance Bank Guarantee of the amount equivalent to the 10% of the cost of equipment from any Nationalized Bank. The Performance Bank Guarantee is required for the entire period of Warranty. Performance Bank Guarantee must remain valid for a period sixty days beyond the expiry of the Warranty Period. Bid security will be refunded back on submission of performance Security.

9. GUARANTEE:

The tenderer has to declare that the goods sold to the buyer under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications.

10. JURISDICTION:

All questions, disputes, or differences arising under, out of or in connection with the contract, if concluded, shall be subject to the exclusive jurisdiction at the place from which the acceptance of Tender is issued i.e. Jurisdiction of KOLKATA HIGH COURT. Acceptance to this effect is also necessary at the time of opening of Technical Bid.

11. Interested vendors must be able to supply adequate spares and consumable during the warranty period. Vendor should also ensure trouble free service and

performance for another **two years beyond the Comprehensive Warranty Period** with adequate spares and accessories.

12. ACKNOWLEDGMENT:

It is hereby acknowledged that we have gone through all the points listed under "Instructions & Special Conditions" outlined above, and those in the accompanying note on "Important Conditions", and we agree to abide by them under the penalty of permanent disqualification for Tender participation and for related penal actions for non-abidance of the conditions.

**SIGNATURE OF TENDERER ALONG WITH
SEAL OF THE COMPANY WITH DATE**

NOTE: ONE AGENT CANNOT REPRESENT TWO SUPPLIERS OR QUOTE ON THEIR BEHALF AT ONE TIME.

In case of import all the particulars required for opening Letter of Credit (L/C) should be furnished in clear terms. After opening of L/C, based on our tender, no more requests for amendment of L/C will be entertained. Total price including supply, installation and commissioning at I.I.T., Kharagpur, should be quoted. The cost of items that may be supplied from indigenous resources and also installation part if installation is done by Indian Agents should be stated in Indian Rupees.

- 1. In case of Import, bidders are requested to quote FCA/FOB price mentioning Freight & Insurance charges separately. Ex-Works pricing may be considered.*
- 2. Warranty should be valid for one years for all items including third party items.*
- 3. Quotations should be submitted in Separate Sealed Cover (with Sealing Wax). The quotation should be in typed format. No manual entries are allowed and any manual entry will entail rejection at the opening stage itself.*
- 4. Before submitting vendor should ensure that they have submitted the following in the technical bid, the documents as mentioned hereunder: Technical Literature, Specification documents, **Point-by-point Compliance Statement**, General Terms & Conditions, Acceptance of Kolkata High Court Jurisdiction, Name and address of 3 organizations of which 1 must be in India where the OEM has installed 1 such equipment in the last 2 years and **a copy of Price bid with prices masked.***

The Commercial bid shall have all the commercial documents, agreements and Price bid. Prices should be given component wise to enable the Institute to decide the final configuration.

TECHNICAL BID DOCUMENT

FORMAT TO BE FILLED BY THE MANUFACTURERS/ INDIAN AGENTS (ON BEHALF OF THEIR FOREIGN PRINCIPLES) OR THEIR AUTHORIZED COUNTRY DISTRIBUTORS/ REPRESENTING DEALERS/ REGIONAL AGENCIES, SUBMITTING TENDER FOR SUPPLY OF Lock in Amplifier FOR IIT KHARAGPUR (DEPARTMENT OF ELECTRICAL ENGINEERING)

1. Name of the Tenderer :
2. Status of the Tenderer: (attach documents, if registered company/partnership/proprietorship)
3. Whether OEM/representing foreign principle : (attach copy of certificate/authorization)
4. Details of key top official/authorized official: (attach details)
5. Details of tie-ups for supply if any: (Attach details, agreements, escalation matrix)
6. Income Tax and Service Tax returns of previous three assessment year (copy) :
7. Name of the vendor's three largest clients, to whom similar products and services were extended :
8. Name and address of Vendor's bankers::
9. Income Tax Permanent A/c No. (attach copy) :
10. **Details of EMD/Bank Draft No., issuing branch and date:**

Certified that all above information are correct to the best of my/our information, knowledge and belief.

Dated: _____ Signature & seal of the Authorized person of OEM/Vendor

NOTE: This is to be submitted in a separate sealed envelope superscribing "TECHNICAL BID", "Tender Notice no IIT/EE/ENQ-8/KB(INST)/2019-20 Date: 26-08-2019 and Name of the Items. All technical documents like literature, catalogues etc., are to be put in the same envelope. Price bid of that company/firm only will be opened which do technically qualify, for further consideration. Attach all relevant documents in the same serial order as above, properly indexed, duly signed and sealed.

DECLARATION

1. I, -----Son /Daughter of Shri -----

Proprietor/Partner/CEO/MD/Director/
Authorized Signatory of M/s. ----- am competent
to sign this declaration and execute this tender document.
2. I have carefully read and understood all the terms and conditions of the tender
and hereby convey my acceptance of the same.
3. The information/ documents furnished along with the above application are true
and authentic to the best of my knowledge and belief.
4. I/we am/are well aware of the fact that furnishing of any false information/
fabricated document would lead to rejection of my tender at any stage besides
liabilities towards prosecution under appropriate law.
5. Each page of the tender document and papers submitted by my Company is
authenticated, sealed and signed, and I take full responsibility for the entire
documents submitted.

----- Signature of the Authorized Person

Date: ----- Full Name: -----

Place: ----- Company Seal: -----