



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

No.: IITKGP/ECE/ENQ/VLSI ENG/4/2018-19

Date: 06.11.2018

Sub: Procurement of Multifunctional Impedance Analyzer for Department of Electronics and Electrical Communication Engineering.

Indian Institute of Technology Kharagpur, an Institute of National Importance, invites sealed bids from reputed manufacturers or their authorized Distributors / Dealers, (foreign firms or their Indian Representative company) who have adequate credential for supply / installation of the items as per the Annexure – I for the Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, India.

Interested parties may submit their sealed bids as per **Technical Specifications** given at **Annexure I**, and **General Terms & Conditions** and Special instruction given at **Annexure II and Annexure III**. Bidders are required to submit their **Details** in the format given at **Annexure IV** along with their 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 & individually shall also be submitted. Kindly refer to the Institute website www.iitkgp.ac.in [link: tenders & quotations] for complete tender details.

The tender be sent in a sealed packet duly superscripted with **Tender Notice No. IITKGP/ECE/ENQ/VLSI ENG/4/2018-19, dated 06.11.2018**, to the Office of **The Head, Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology Kharagpur, P.O.- Kharagpur Technology, PIN - 721 302, West Bengal, India** on or before **27.11.18 by 3:00pm**.

For any query pertaining to this bid document, correspondence may be addressed to- The Head, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology Kharagpur, Pin-721302. [Ph.: 03222-281487]

For any technical /specification related query please contact:

Lab. In-Charge, VLSI Engineering Lab.,
Department of Electronics and Electrical Communication Engineering,
Indian Institute of Technology, Kharagpur-721302.
[Ph.: 03222-281465]

The **bids will be opened on 27.11.18 at 3:30 PM** in the Office of Head, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology Kharagpur.

Copy to:

1. Institute website


06/11/18


Head, Department of E&ECE

Description and specification of the Stores

Multifunctional Impedance Analyzer (one unit)

General Requirements

Maximum Current	At least ± 250 mA or better
Applied Current Range	10 nA – 250 mA or more
Current Resolution	Should be of the order of few femto ampere.
Maximum Applied Potential	± 12 V or more
Rise Time	< 1 μ s
Noise Level	≤ 20 μ V rms

Impedance measurement requirements

Frequency range	At least 10 μ Hz - 1 MHz or better
Input Impedance	10^{12} Ω
Reference electrode input bandwidth	10 MHz

Potential control and measurement requirements

Applied Accuracy	± 1 mV / $\pm 0.2\%$
Applied Resolution	≤ 0.002 % of full range
Measured Accuracy	± 1 mV
Measured Resolution	≤ 0.002 % of full range

Current control and measurement requirements

Applied Accuracy	$\leq \pm 10$ pA / $\pm 0.3\%$
Applied Resolution	0.03% full-scale/bit or lower
Measured Accuracy	± 10 pA $\pm 0.3\%$ of range or less
Measured Resolution	0.005% full-scale/bit or lower

Extra requirements

Scan rate 100 $\mu\text{V/s}$ – 100 V/s or better

Electrode configuration 2, 3, and 4

i-t sample interval of the order of few micro second

Instrument should act as wide frequency impedance analyser, potentiostat, galvanostat and zero resistance ammeter as well.

Techniques

- Capacitance – Voltage
- AC Impedance
- Impedance – Time
- Bode and Nyquist & Mott-Scottsky plot
- Cyclic Voltammetry
- Linear Sweep Voltammetry
- Chrono Amperometry
- Chrono Coulometry
- Electrolysis with Coulometry
- Open Circuit Potential – Time
- Chronopotentiometry
- Chronopotentiometry with Current Ramp
- Multi-Current Steps
- Potentiometer Stripping Analysis
- CV simulator
- Impedance Simulator & fitting program
- IR Compensation
- External Potential Input
- Auxiliary Signal Measurement Channel

Software: Licensed and full version software for all the functions and procedures (including simulation techniques) mentioned above.

Manufacturer should provide free upgradation of the software.

Warranty: At least 1 year

Upgradable option

There should be provisions for future upgrade of the system with improved specifications and by adding some more techniques.

*N.B. Delivery, Installation & Commissioning at site is necessary.
And all the specification should be acknowledged by the manufacturer's data sheet.*

GENERAL TERMS and CONDITIONS

- (1) Price may be quoted in foreign currency for imported items. Manufacturer/Indian Agents of OEM should submit *two* parts bid, Technical and Commercial bid in separate sealed envelopes. The technical bid should have a copy of commercial bid with prices masked. Modules to be supplied by the Indian Agent from Indigenous sources must be with ISO 9001 or equivalent certification and unit prices of such modules must be given in Rupees. Modules should have same warranty of three years, as per the main equipment.
- (2) Only those manufacturers/their Indian Agents are eligible to quote who have supplied and installed at least *ten* such equipment in India during the past *two* years. The bids must accompany copies of authentic user's certificates on successful installations in India. IIT Kharagpur reserves the right to verify confidentially the information in this regard from the users) and
 - (a) Provide the name of the Indian Agent who will be responsible for maintaining the equipment during the entire period under warranty and CMC
 - (b) Provide names of service engineer who are posted in India; the service engineers should have been trained at Original Equipment Manufacturers (OEM's) own unit.
- (3) While submitting the technical bid, the company must undertake to ensure continued availability of adequate number of technically qualified Service Engineers for the Equipment during the period of supply.
- (4) Period of validity: Bids shall remain valid for acceptance for a period of *Four months* (120 days) from the date of opening of Price Bids.
- (5) Conditional offer will not be accepted.
- (6) Late Tenders: - Tender received after the due date and time of submission as mentioned below shall not be accepted.
- (7) Indian Agents of Bidders or Indian Agents who are bidding on behalf of their principals are to enclose the following documents:
 - (a) Current Income Tax and Sales Tax clearance certificates and PAN No.
 - (b) Banker's Solvency Certificate.
 - (c) Summary of Audited statement of Accounts for the last three years to be enclosed and financial highlights and the key performance during the last three quarters to be enclosed as per format:
Company's Key Performance

Description.	April to June	July to Sept.	Oct. to Dec.
Gross Revenue			
Profit Before Tax			
Profit After Tax			
Return on Invested Capital (ROIC)			

- (8) (a) Name and Address, phone and e-mail address of minimum five clients, out of which at least One should be in India to whom such/similar equipment have been supplied during the past two years should be mentioned. (b) Customer satisfaction certificate from one such organization is to be attached with the technical bid.
- (9) All Tenders (unless otherwise specified) are to be submitted/handed over to *The Head of the Department of Electronics and Electrical Communication Engineering. , IIT Kharagpur-721 302* and acknowledgement to be obtained.
- (10) The person attending the bid opening session should be delegated with appropriate Power of Attorney (duly endorsed by a Notary Public) by the Chief Executive Officer of the Company to sign such documents. Only two persons on behalf of each Company will be allowed to participate/attend the Bid opening session.
- (11) Bid once submitted shall be the property of IIT Kharagpur and shall not be returned to the vendor at any time.
- (12) A bid submitted with false information will not only be rejected but the vendor may also be debarred from participation in future tendering process.
- (13) Canvassing in any form not only invites disqualification in this tender but may also result in debarring the vendor from participation in the future tendering process.
- (14) The vendor may be required to give presentation. Demonstration on the systems offered where vendor has installed and integrated similar solution may need to be arranged by the vendor at their own cost.

- (15) Materials such as pipe, bricks, sand, stone-chips, cement, paint etc. if required for the installation of the above item and other fixation work will have to be supplied by vendor free of cost.
- (16) The Company must be able to provide an all-inclusive Comprehensive Annual Maintenance Contract for the equipment beyond the Warranty Period. The Institute would like to enter into Comprehensive Maintenance Contract beyond initial warranty Period with the manufacturer. No advance payment towards CMC without submission of Bank Guarantee is admissible.
- (17) The installation must be completed within 15 days from the date of receipt by this institute. The presence of Service Engineer from the principal at the time of installation is essential.
- (18) The Company must ensure the Institute about the 95% uptime during the operational period at the Institute with suitable spares and consumable at IIT Kharagpur. However, IIT Kharagpur may allow maximum time of 48 hours for the consumable available in India and for other items maximum of 05 working days from the date of lodging of report. A penalty of Rs. 5000/- (five thousand rupees only) per day shall be imposed for delay beyond 5 days. Similar penalty will be applicable for installation delay beyond 15 days from the receipt of the instrument at site.
- (19) Change of Indian Agent: Prior intimation is required for this change. The new Agent should undertake to submit fresh performance guarantee first.
- (20) Documents to be furnished by concerned Indian Agents
 - (a) Foreign Principal's proforma invoice indicating the commission payable to the Indian agent and nature of after sales service to be rendered by the Indian agent.
 - (b) Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
 - (c) The enlistment of the Indian agent with Director General of Supplies and Disposals under the Compulsory Registration Scheme of Ministry of Finance.

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;

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.O.B. & C.I.F. Kolkata price by Air 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 within 30 days from the date of receipt of the Letter of Credit copy / 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 sales 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. Payment of Customs Duty will not be made separately. It can be charged in the final invoice. 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.
- (vii) **Price of each components or options (in case equipment) must be specified individually.**

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) Indian Agent should submit Income Tax clearance Certificate (duly countersigned) by the Income Tax Officer of the Circle concerned under Seal of his office. ii) Complete address and phone/links for contact persons in principals and Indian agent offices dealing with this purchase. iii) Proof of having ISO 9001 or other equivalent certification given by appropriate authorities.
- iv) Authorized Dealer's Certificate.
- v) Manufacturer's Standard Warranty certificate.

7. 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.

8. GUARANTEE :

The tendered 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.

9. 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.

10. 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.

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

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 request 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 FOB price mentioning Freight & Insurance charges separately. No Ex-Works pricing is considered.
2. Warranty should be valid for **Two 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 5 organizations of which 1 must be 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.

Important:

1. The institute 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. In case of any dispute, the decision of the Registrar of this Institute shall be final and binding on the Bidders.
3. For any query pertaining to this Bid document, correspondence may be addressed to :-

**The Head, Department of Electronics and Electrical Communication Engineering,
Indian Institute of Technology Kharagpur, Pin- 721302, West Bengal, India.**
[Ph.: 03222-281487]

& for any technical/specification related query please contact:

Lab. In-Charge, VLSI Engineering Lab,
Department of Electronics and Electrical Communication Engineering,
Indian Institute of Technology, Kharagpur-721302
[Ph.: 03222-281465]

N.B.: 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.

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 MULTIFUNCTIONAL IMPEDANCE ANALYZER:

1. Name of the Tenderer :
2. Status of the Tenderer :
(attach documents, if registered company/partnership/proprietyship)
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/services, if any :
(attach details, agreements, escalation matrix)
6. Income Tax and Service Tax returns of previous three assessment year (copy) :
7. Financial status of bidder and/or his associates including Annual Report & Balance Sheet/Statement of Account of past three years with Registration of Companies (ROC) receipts duly authenticated by Chartered Accountant
:
8. Current list/address of clients where similar material has been supplied and successfully working :
9. Name of the vendor's three largest clients, to whom similar products and services were extended & amount of transaction/annual bills to such clients :
10. Name and address of Vendor's bankers and attach a Solvency Certificate from the Bank for a minimum amount of Rs. 20.00 Lakh. :
11. Income Tax Permanent A/c No. (attach copy) :

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 super scribing "TECHNICAL BID", Notice inviting Tender NoXXXXXXXXX dated XXXXXXXXXX and name of the bidder. 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 : -----