



**NATIONAL INSTITUTE OF TECHNOLOGY
RAIPUR – 492 010, CHHATTISGARH**

Open(Advertised) Tender for Purchase of various Lab Equipments (Two Bid System)

Department: Electronics and Communication Engineering

Enquiry No: NITRR/S&P/ET/OT/2020/535

Date:10/09/2020

Important Dates

To

Event	Date	Time
Last Date of submission of quotation	06/09/2020	06:00PM
Technical bid Opening date	08/09/2020	04:00PM
Price (financial) bid Opening	To be Informed to technically successful bidder by mail and phone.	

Dear Sir,

We intend to purchase the commodities specified in this document and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly submit your offer with prices and complete terms within the time mentioned above through our e-tender portal www.tenderwizard.com/NITR .Tender will be accepted online only & no other mode will be accepted.

Yours sincerely,

Registrar
National Institute of Technology,
Raipur

Enclosed:

- (1) Bid Document - Instruction to bidder - containing detail terms and conditions.
- (2) Acceptance of terms & conditions of tender-Annexure 1
- (3) List of Equipment's/machines/commodity etc.- Annexure 2
- (4) Technical Specification – Annexure 3
- (5) Technical Compliance Format- Annexure 4
- (6) Price Bid Format in INR – Annexure 5

- (7) Price Bid Format in of imported items in currency other than INR -Annexure 6
- (8) Deviation statement form - Annexure 7
- (9) Bidder information & check list- Annexure 8

BID DOCUMENT

INSTRUCTION TO BIDDER

1. Please go through the enclosed "bid document" carefully for other bidding instructions.
2. **IMPORTANT NOTE:** Being a Two-Part Tender (techno-commercial and price bid), fax quotations will not be accepted. Please ensure your offers are received on or before tender due date and time. Bidder/ Tenderer are requested to download the tender documents from our website (www.nitr.ac.in) & e-tendering portal i.e. www.tenderwizard.com/NITR and submit tender fee of amount ` 1180/- (inclusive of GST) through online mode in our e-tendering portal i.e. www.tenderwizard.com/NITR. **Kindly note that if any bidder wants to quote for more than one item in the tender then he has to pay tender fee only once at first and for later he will be exempted to pay tender fee for another items (have to select exempted option on payment page). If any vendor paid more than one tender fee in case of multiple items then the excess payment will not be reversed, so please be careful while submitting the bid.**
 - **Quotations received without tender fee will not be considered.**
 - No request for extension of the due tender date will be considered.
 - In the event any date indicated above is declared as holiday, the next working day at Institute shall be considered as the due date for receiving & opening of tenders.
 - The bids shall be opened on date and time as mentioned above. The bidders may send their authorized representatives to attend the bid opening, if they so desire.
 - Bids received after the deadline of receipt indicated above, shall not be taken in to consideration.
3. The bid should remain valid for a period of **180 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation. Validity period may also be extended without change in bid prices ,if required on mutually agreed basis only.
4.
 - (a) **In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender. In the event of simultaneous bidding by both Principal/OEM and Indian agent; the bid submitted by the Indian agent will not be considered.**
 - (b) **If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for same item/product. In the event, an agent submits the bids on behalf of more than one Principal/OEM for the same item in same tender, then all such bids will not be considered.**

5. **Clarification of bidding documents:** If a prospective bidder requires any clarification in regard to the bidding documents, they may mail to storenpurchase@nitrr.ac.in (for Commercial terms) and hod.etc@nitrr.ac.in, smajumdar.etc@nitrr.ac.in (for Technical queries) at least 15 days before the deadline for receipt of bids.
6. **Submission of bids: Bidders have to submit their bid through E-tendering mode only at website www.tenderwizard.com/NITR.**
7. Financial Bid (Microsoft Excel File) is to be downloaded from website www.tenderwizard.com/NITR and then is to be filled, saved and uploaded (through digital signature) on the same website and not to be submitted in hard copy at all.
8. The Financial Bid (after filling the rates) should neither be scanned & uploaded, nor, the hard copy of the same should be submitted to NIT Raipur office.
9. **The complete Tender document can be viewed and downloaded only from the website(www.tenderwizard.com/NITR) & www.nitrr.ac.in during the tender sale period. The intending bidders should submit the tender documents sale price & tender processing fee, through e-payment, at the time of making online request.**
10. Complete tender papers, duly accompanied with receipts of e-payment of tender cost, EMD shall be received online as per date and time mentioned. Tender shall be opened through Etendering systems, in presence of bidders or their authorized representatives.
11. Complete tender documents must be submitted on or before **as per schedule mentioned through E-Tendering mode only at website i.e. www.tenderwizard.com/NITR.**
12. Tenderers are advised to complete all submission related work well before last date for submission of tender online. Any request for modification in the time/date of submission of tender due to tenderer's failure to submit his offer, will not be accepted. Tenderer must try to submit their bid prior to last date to avoid any failure.
13. **To participate in the E-tender, it is mandatory for the bidders to have user ID & password, which has to be obtained by submitting an annual registration charges of Rs. 2000/- +GST @ 18% to ITI, through e-payment. Also it is mandatory for all bidders to have class 3 digital signature certificates from any of the CCA (Controller of Certifying Authority, India) or if any support required on DSC, Please contact back to us. (Helpdesk No. 011-49424365, 8800991863)**
14. The bid along with necessary documents should be uploaded only on the www.tenderwizard.com/NITR portal as per guidelines mentioned in the portal. Tender have to be submitted only online at <https://www.tenderwizard.com/NITR>. All documents in support of eligibility criteria etc. are also to be scanned and uploaded along with the tender documents. Tender sent by any other mode will not be accepted.

15. Amendment of Bidding Documents

- o Corrigendum, if issued any for the tender, shall form part of the Tender Document. Corrigendum will be posted on NIT RAIPUR website (www.nitr.ac.in) & www.tenderwizard.com/NITR. Bidders/Tenderers are requested to visit NIT RAIPUR website regularly and note the corrigendum / amendments to the tender without fail and submit the offer accordingly. NIT RAIPUR will not be responsible for ignorance of corrigendum.
- o At any time prior to the deadline for submission of bids, the Institute may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder/Tenderer, modify the bidding documents by amendment. The same would also be hosted on the website of the Institute and all prospective bidders/tenderer are expected to surf the website before submitting their bids to take cognizance of the amendments. Bidder/Tenderer who has submitted bids before publishing the amendment may revise their bid incorporating the amendments before the last date of tender.
- o In order to allow prospective Bidder/Tenderer's reasonable time in which to take the amendment into account in preparing their bids, the Institute, at its discretion, may extend the deadline for the submission of bids and host the changes on the website of the Institute.

16. Custom duty: The NIT Raipur have registration in Department of Scientific & Industrial Research(DSIR).

17. Bid Security (BS)/(Earnest Money/ EMD)

- I. The Bidder/Tenderer shall furnish, as part of its bid, a bid security (BS). **The EMD/Bid security should be submitted online only through e-tendering portal i.e. www.tenderwizard.com/NITR.** The EMD amount will be as follows:-

S.N.	Name of Equipment	EMD Amount
1	(i) Analog Circuit Trainer Kit (ii) RF Signal Generator	Rs.23250/- (Rupees Twenty Three Thousand Two Hundred Fifty Only)
2	Open MV CAM Signal Processing Set	Rs. 10500/- (Rupees Ten Thousand Five Hundred Only)
3	(i) Microprocessor Trainer Kit with peripheral modules (ii) Logic Analyzer (iii) Digital Trainer Kit	Rs. 24000/- (Rupees Twenty Four Thousand Only)
4.	Software Defined radio with built-in embedded computer	Rs. 15000/- (Rupees Fifteen Thousand Only)
5	(i) Digital Communication Trainer Kit (ii) Digital Storage Oscilloscope (iii) Digital Multimeter	Rs. 19350/- (Rupees Nineteen Thousand Three Hundred Fifty Only)

- II. In the case of foreign bidders/tenderers, the BS shall be submitted either by the principal or by the Indian agent and in the case of indigenous bidders/tenderers; the

BS shall be submitted by the manufacturer or their specifically authorized dealer/Bidder/Tenderer.

III. Any bid without EMD or bid not secured in accordance with above will be rejected by the Institute as non-responsive.

IV. The bid security of unsuccessful Bidder/Tenderer will be discharged /returned as promptly as possible but not later than 30 days after the expiration of the period of bid validity or placement of order whichever is later.

V. The successful Bidder/Tenderer's bid security will be discharged upon the Bidder/Tenderer furnishing the performance security.

VI. The firms registered with DGS&D & NSIC, if any, are exempted from payment of BS provided such registration includes the item they are offering which are manufactured by them and not for selling products manufactured by other companies.

VII. The bid security may be forfeited:

- (a) If a Bidder/Tenderer withdraws or amends or impairs or derogates its bid during the period of bid validity specified by the Bidder/Tenderer on the Bid Form; or

18. Sealing and Marking of Bids:

In a two bid system All Bidders/Tenderers are requested to follow carefully the following instructions before preparing their offer.

Part I: Technical & Commercial Bid

Part – (a) Technical

- (i) This part should contain detailed specifications of the items quoted by you along with technical literature and leaflets.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and commercial specifications can also come in this part.
- iv. Prices should NOT be indicated in this cover.

Part – (b) Commercial terms: (WITHOUT PRICE)

- i. The commercial terms applicable for the items quoted by you should be indicated in this part.
- (ii) If any compliance statement is called for the commercial terms/contractual terms and conditions, the same is to be attached in this part.
- (iii) ***Prices should NOT be indicated in this part. However a copy of the price bid (without prices) must be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid.***
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.
- v. The Tenderer/ bidder need to upload the following certificates along with the Tender Documents to confirm their eligibility in this part :

- Proof of establishment of Firms/shop/business/ manufacturing unit etc. or Goods and Service Tax Registration Certificate(REG-06 Format), whichever applicable.(Clear visible scanned copy)
- Proof of registration with any other central government organization (if any)
- Photocopies of purchase orders received from any central govt. organization to the firm (if any).
- The bidder should Photocopy of PAN card issued in the name of the bidder's firm. .(Clear visible colored scanned copy)

Note:

- Technical Specifications and terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
- **The bidders must have to upload acceptance of tender terms & conditions duly sealed & signed in e-tendering portal(As per Annexure-I).**
- Please note that the PRICE SHOULD NOT BE indicated in this part.

Part II: Price Bid

The prices applicable for the items, item-wise in response to the tender shall come into this part in the prescribed format only. ***Bid will be rejected if rates are not quoted in the prescribed format.***

- i. Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.

19. The bidders should quote their offer / rates in clear terms without ambiguity.

20. The rates should be quoted both in figures and words and legibly written without any over-writings. In case of any correction, the same must be attested by the bidder with full signature. However, no over-writing is permissible. Manufacturer's price-list, where applicable, should be submitted along with the bid.

21. In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.

22. Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.

23. The bidder has to sign in full at all pages of the bidding document.

24. Bid Prices

(i) The Bidder /Tenderer shall indicate **unit prices in the prescribed format only.**

(ii) Prices indicated on the price-schedule form shall be entered separately in the following manner:

(a) For Goods being offered from India/ abroad in INR

- (b) The price of the goods quoted should be FOR NIT RAIPUR inclusive of all taxes(GST, Custom etc), charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the price schedule form, installation, commissioning, training charges etc , if any. **(Annexure V)**

(b) For Goods being offered from abroad in currency other than INR

- i. The price of the goods, quoted on FCA (named place delivery abroad) or FOB (named port of shipment), as specified in the price schedule form. The price should be FOR NIT RAIPUR inclusive of all taxes, charges for insurance and transportation of the goods, agency commission, installation, commissioning, training charges etc if any. **(Annexure VI]**
- ii. The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.
- iii. Prices quoted by the Bidder/Tenderer shall be fixed during the Bidder/Tenderer's performance of the Contract and not subject to variation on any account.
- iv. If at any stage of the price quoted GST applicable, it should be clearly mentioned.

25. Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.

26. Responsiveness of Bids

- (iv) Prior to the detailed evaluation, the Institute will determine the substantial responsiveness of each bid to the bidding documents. For purposes of this clause, a substantive responsive bid is one, which conforms to all terms and condition of the bidding documents without material deviations, reservations or omissions. A material deviation, reservation or omission is one that:
 - (a) affects in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
 - (b) limits in any substantial way, inconsistent with the Bidding Documents, the Institute's rights or the Bidder/Tenderer's obligations under the Contract; or
 - I if rectified, would unfairly affect the competitive position of other bidders/tenderers presenting substantially responsive bids.
- (ii) The Institutes' determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- (v) If a bid is not substantially responsive, it will be rejected by the Institute and will not subsequently be made responsive by the Bidder/Tenderer by correction of the material deviation, reservation or omission.

27. Evaluation and comparison of bids

- (i) The Purchaser shall evaluate each bid that has been determined, up to this stage of the evaluation, to be substantially responsive.

- (ii) To evaluate a Bid, the Purchaser shall only use all the factors, methodologies and criteria defined below. No other criteria or methodology shall be permitted.
- (iii) The bids shall be evaluated on the following basis which shall be arrived as under:

For goods being offered from India.

Goods price will be calculated FOR NIT Raipur. Lowest bid (L1) will be deciding by the price of the goods quoted should be FOR NIT RAIPUR inclusive of all taxes(GST & Custom Duty, etc), charges for inland transportation, installation, commissioning, training charges, insurance and other local services required if any for delivering the goods at the desired destination as specified in the price schedule Price Bid format

For goods being offered from Abroad

- (i) In case of goods being offered from abroad, Lowest bid (L1) will be decided based on total cost at NIT Raipur, that include basic price of goods, freight and Insurance up to Indian Airport/port (CIF/CIP value up to Indian airport/port), custom duty and other taxes as applicable etc., Inland transportation and insurance up to NIT Raipur, packaging, forwarding, agent commission for custom clearance and installation, commissioning and training charges if any.
- (ii) **Conversion to Single Currency:** To facilitate evaluation and comparison, Bids quoted in foreign currency will be converted into Indian Rupees at the selling exchange rate established by Reserve Bank of India on its website, on the date of price bid opening.
- (iii) In case charges for packing, forwarding, transportation inside India, custom clearance charges or other incidental charges are quoted extra in addition to the quoted rates, the amount thereof must be specified. Packing, forwarding, freight, entry tax etc., when quotes separately are reimbursable at actuals after production of original receipts/invoices. If external agencies are employed, their receipts must be enclosed with the invoice.
- (iv) *If vender wishes, he/they may alternatively, quote price of imported items in Indian rupees. In this case item may be treated as offered from India. Payment will be released accordingly.*

Note: *Where there is no mention of packing, forwarding, freight, transportation, insurance charges, taxes etc. such offers shall be REJECTED as incomplete.*

28. Clearance and delivery

On arrival of shipment/consignment, the supplier is required to arrange custom clearance and transportation of the consignment up to NIT RAIPUR premises. The Tenderer/ bidder will do all types of clearance work and **formalities to deliver/provide the equipment at the site of installation. The expenses incurred will be reimbursed on actual basis not exceeding the quoted amount.**

Institute will provide all types of documentary support including Customs Duty exemption certificate. The custom duty, demurrage (in case of delay in release of custom duty to the custom department by NIT Raipur) and government taxes/levies (if any) will be paid extra by the buyer after as per term of payment. Please note that the State of Chhattisgarh may charge entry tax on all goods entering the State. This may be included in your quotation as a separate item. Entry Tax will be reimbursed on production of proof of payment. **Principals will themselves have to procure any requisite permission from the Govt. of country of origin of equipment.**

29. Agency Commission/other charges

Agency commission, if any, should be clearly mentioned by the Bidder/tenderer and will be paid in Indian Currency. Please note that actual reimbursement will not exceed the quoted amount in any circumstances.

30. The Institute reserves right to conduct pre-dispatch inspection of goods and the vender must facilitate it at NIT Raipur's cost for pre-dispatch inspection.

31. **Warranty Period:** The warranty period should be minimum **1 year** with spares or as mentioned in technical specifications (whichever is higher) from the date of installation with satisfactory performance as per specifications. For standard items which carry warranty of more than one year, standard warranty shall be applicable.

32. **Terms of Payment:** The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:

(i) Payment for Goods and Services offered from India:

Payment for Goods and Services supplied from within India shall normally be made in Indian Rupees, as follows: 100% payment will be made in account payee cheque or Draft/ online Transfer using RTGS to the Supplier normally within thirty (30) days after the successful installation and commissioning of equipment's subject to submission of performance security, if any.

(ii) Payment for Goods and services offered from abroad:

Payment of foreign currency portion shall normally be made in the currency of contract in the following manner:

a) **On Shipment:** Ninety (90) percent of the Contract Price of the Goods shipped shall be paid through irrevocable letter of credit (L/C) opened in favor of the Supplier in a bank in its country, upon submission of following documents specified as below:

Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by Registered Post/ courier and copies thereof by FAX.

- i. Two copies of supplier's Invoice giving full details of the goods including quantity, value, etc.;
- ii. Packing list;
- iii. Certificate of country of origin;
- iv. Manufacturer's guarantee and Inspection certificate/test report;
- v. Inspection certificate issued by the Purchaser's Inspector, if any.
- vi. Insurance Certificate, if required under the contract;
- vii. Name of the Vessel/Carrier;

- viii. Bill of Lading/Airway Bill;
- ix. Port of Loading;
Date of Shipment;
- x. Port of Discharge & expected date of arrival of goods and
- xi. H S code of classification of goods.
- xii. Any other document(s) as and when required in terms of the contract.

Note:

1. The nomenclature used for the item description in the invoices(s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s)
2. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.

- b) **On Acceptance:** Ten (10) percent of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of the Goods and successful installation & commissioning upon submission of claim supported by the acceptance certificate issued by the Purchaser along with the Performance security, if any.

- The L/C will be confirmed at the suppliers cost, if requested specifically by the supplier. If L/C is requested to be extended/ reinstated for reasons not attributable to the purchaser, the charges thereof would be to the suppliers' account. All bank charges in India to the account of the opener and all bank charges outside India to the account of the beneficiary. Payment of local currency portion shall be made in Indian Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. The L/C for 100% value of the contract shall be established after deducting the agency commission payable, if any to the Indian agent from the CIF/CIP value.

33. **Performance Security (PS):** The successful bidder has to furnish "**Performance Security of 10% of the ordered value in Indian Rupee**", in the form of Account Payee Demand Draft, / Fixes deposit and/or unconditional Bank guarantee encashable on demand from the Director, NIT, Raipur, from a nationalized Bank with validity period of sixty (60) days beyond the date of completion of all contractual obligations of supplier including guarantee/ warranty obligations. The Performance Security is to be furnished in favor of the Director, National Institute of Technology, Raipur, within ten days of intimation, failing which his bid security will be forfeited.

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 any warranty obligations.

34. **Delivery period:** Delivery should be made within **150 days** from the date of order of placement of goods offered from India or opening of the LC in case of goods offered

from abroad. However delivery period will be vary as per item and urgency of requirement of the institute.

35. **The Insurance** shall be for an amount equal to 110% of the CIF or CIP value of the contract from within “warehouse to warehouse/installation site (NIT Raipur)” on “all risk basis” including strikes, riots and Chemistry commotion.
36. **Delayed delivery:** Maximum one month extension in delivery period may be given on the receipt of written request of the successful vendor; however liquidated damage at the rate of 0.5% of the price per week or part thereof of delay will be recovered from the firm of the value of undelivered goods. Request for extension in delivery period should be made before the last date of supply as mentioned in Purchase Order.
- Non delivery beyond extended period:** If the Tenderer fails to execute the order within the delivery period as mentioned above the order will be cancelled and EMD will be forfeited by the institute.
37. **Installation time:** The Company must install the equipment within a period of two months from the date of delivery of the equipment at NIT Raipur failing which order will be cancelled and EMD will be forfeited. However, necessary requirement for installation of goods/equipment will be provided by institute.
38. **Copy Right:** The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

39. Insurance:

- a. Should the purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured in Indian Rupees against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.
- b. Where delivery of the goods is required by the purchaser on CIF or CIP basis the supplier shall arrange and pay for Cargo Insurance, naming the purchaser as beneficiary, initiate & pursue claims till settlement, on the event of any loss or damage.
- c. With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

40. **Right to use Defective Goods:** If after delivery, acceptance, installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

41. **Site preparation and installation:** The Purchaser is solely responsible for the construction of the equipment sites in compliance with the technical and environmental specifications defined by the Supplier. The Purchase will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchaser's site immediately after notification of Award / Purchase Order / Agreement.

37. Force Majeure:

- (i) Notwithstanding the Clauses relating to extension of time, penalty and 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.
- (ii) For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- (iii) If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. 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.
- (vi) If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of force majeure for a period exceeding 60 days, either party may at its option terminate the contract without any financial repercussions on either side.

38. Defective Equipment:

- (vii) If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, unmerchantable or not in accordance with the description /specification or otherwise faulty, the institute will have the right to reject the equipment or its part. The prices of such equipment

shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made to him.

- (viii) All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges.

39. Any disputes arising out of this enquiry shall be dealt in the Raipur jurisdiction.

40. Bidder has to sign all the pages of this tender and enclose it with the bid.

Registrar
NIT-Raipur

List of Annexures

1. Acceptance of tender terms & conditions-Annexure-1
2. List of Equipments – Annexure 2
3. Technical Specification of equipments/goods – Annexure 3
4. Technical Compliance of the bidder with reference to the 'Specification of Equipments :Annexure 4
5. Price Schedule for goods being offered from India – Annexure 5
6. Price Schedule for goods being offered from Abroad. – Annexure 6
7. Deviation statement form - Annexure 7
8. Bidder information & check list – Annexure 8

Annexure 1**Acceptance of terms & conditions of tender(Must be on Letter Head)**

Date:

To,
The Registrar,
National Institute of Technology,
Raipur-492010(Chhattisgarh)
Subject: Acceptance of Terms & conditions of Tender.

Tender ref. No.: NITRR/S&P/ET/OT/2020/535**Dated:10/09/2020**

Dear Sir,

1. I/We have downloaded/obtained the tender document(s) for the above mentioned Tender enquiry no. from the website www.tenderwizard.com/NITR or www.nitr.ac.in.
2. I/We hereby certify that I/we have read entire terms & conditions of the tender documents from Page 01 to 32 (including all documents like annexure, schedules etc.) which form part of the tender document and I/we shall be abide by the terms & conditions/clauses contained therein.
3. The corrigendum(s) issued from time to time by NIT Raipur to have also been taken into consideration, while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/corrigendum(s) in totality/entirely.
5. In case any provisions of this tender are found violated, NIT Raipur shall be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely and we shall not have any claim/right against NIT Raipur in satisfaction of this condition.
6. I/We confirm that we or our proprietor/Director/Partner have not been blacklisted or debarred or declared ineligible for corrupt/fraudulent practices either indefinitely or for a particular period of time by any Government or other agency. I/we further declare that no criminal case is registered on pending against the firm/company or its owner/partners/directors anywhere in India. Also there are no contractual restrictions or legal disqualifications or other obligations which prohibit the applicant from entering into tender process.

(Seal & Signature of the bidder)

Annexure 2

List Of Equipments To Be Procured Under Tender

S.N.	Name of Equipment	Qty
1.	Analog Circuit Trainer Kit	1
2.	Open MV CAM Signal Processing Set	1
3.	Microprocessor Trainer Kit with peripheral modules	1
4.	Logic Analyzer	1
5.	Digital Trainer Kit	10
6.	Software Defined radio with built-in embedded computer	5
7.	Digital Communication Trainer Kit	1
8.	Digital Storage Oscilloscope	3
9.	Digital Multimeter	5
10.	RF Signal Generator	1

Note: None of the item will be used for research purpose and standard GST rates will be applied. Kindly quote GST rate applicable as per HSN Code of the product. Concessional GST certificate will not be provided.

Annexure 3

Technical Specification of equipments/goods

(I) Analog Circuit Trainer Kit:

1. Class A Transistor Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

2. Class B Transistor Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

3. Class C Transistor Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

4. Class AB Transistor Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.

- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

5. RC Coupled Amplifier Kit (single and Double stage) – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- On-board Single and Double Stage RC Coupled Amplifier circuit using BJT.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

6. Transformer Coupled Amplifier Kit (single and Double stage) – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- On board Load Resistance : 2 nos
- On board Capacitor : 2 nos
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

7. Class B Push Pull Emitter Follower Transistor Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Inbuilt Circuitry : Push Pull Amplifier with Variable Biasing Resistance Differential Amplifier with Voltage

Divider Circuit.

- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- On board Load Resistance : 2 nos
- On board Capacitor : 2 nos
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

8. Current series feedback Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

9. Voltage series feedback Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

10. Voltage Shunt feedback Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

11. Current Shunt feedback Amplifier Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- In built Sine Wave Generator.
- Frequency: 1Hz-200 KHz in six steps, variable in each step with variable amplitude.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

12. Colpitts Oscillator Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.

- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

13. Wein- Bridge Oscillator Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

14. Hartley Oscillator Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

15. Crystal Oscillator Kit – 01 No.

- In built DC Power Supply: +12VDC @200mA.
- Input Line Voltage: 230V AC $\pm$ 10%, 50Hz.
- Power ON switches with indicator and fuse for protection.
- All the Circuits should be mounted on the PCB board.
- Warranty Period should be a Minimum of 3 years.
- User's manual.
- Circuit manual.

(II) Open MV CAM Signal Processing Set

S. No	Item	Specification	Quantity
1	OpenMV Cam H7 smart vision camera	Processor: ARM® 32-bit Cortex®-M7 CPU w/ Double Precision FPU 480 MHz RAM: 1 MB total Flash: 2 MB total Lens info: Focal Length: 2.8mm Aperture: F2.0 Accessories: Micro USB cable, Plastic enclosure for storage	20
2	Intel Movidius Neural compute stick 2	Processor: Intel Movidius VPU RAM: 1 GB Free storage space: 4 GB	5
3	Raspberry Pi 4	Processor: Quad-Core 64-bit Broadcom 2711,	5

		Cortex A72 RAM: 4 GB WLAN: 802.11 b/g/n/ac (2,4 + 5,0 GHz) Micro SD card: 32 GB <u>Power supply: Minimum 15W USB-C Power Supply for Raspberry Pi 4 Model B</u> Accessories: Aluminum case with heat sinks and fans	
--	--	---	--

(iii) Microprocessor Trainer Kit with peripheral modules

- 8086/8088 CPU should be able to be operating at 5MHz/6MHz/8MHz
- 8086 Processor should be able to be replaced by 8088 Processor
- On-board sockets should be provided to facilitate the use of 8087 Co-processor and 8089 I/O Processor
- Min.16K bytes of RAM using two nos. of 6264 with Battery Backup expandable up to 256KB.
- Min.16K bytes of powerful monitor EPROM using two nos. of 27512
- 72 I/O lines through 3 nos. of 8255 brought at 26 Pins FRC Connector to interface with IC-XX Series.
- 16 bit Timer/Counter through 8253 brought out at 20 Pins FRC Connector.
- Provision of RS-232C interface using 8251 brought out at 9 Pins D-Type Connector.
- Provision of On-board Interrupt controller using 8259 brought out at 20 Pins FRC Connector.
- Provision of 20x2/40x2/20x4/higher Alphanumeric LCD Display with Backlite
- 101 ASCII Keyboard interface using 89c2051 operating @ 12MHz
- Powerful Commands like Examine/Edit Memory, Examine/Edit Register, Single stepping, Execution, Block Move can be used through ASCII Keyboard.
- Provision of On-board Single Line Assembler & Disassembler
- Provision of facility for Downloading/Uploading files from/to PC.
- All address, data & control lines should be available on KXT Bus 50 pin FRC Connector to interface with SC-XX Series.
- All ICs must be mounted on IC Sockets.
- Glass Epoxy PCB to be provided.
- In-Built Power Supply of +5V/2A, $\pm 12V/250mA$ to be provided
- Battery supply should be away from circuit board
- Kit should have a good enclosure.
- User's Manual and circuit manual with sample programs. must be provided
- All component number should clearly displayed.

INTERFACING MODULES COMPATIBLE WITH 8086 and 8085 TRAINER KIT

Details of required modules are given below with minimum required component /connectors and functionality, the quoted modules must be compatible with the Microprocessor kit(s) quoted above. The microprocessor kit together the modules will be considered for cost comparison etc

1. Analog to Digital Converter Module(01-No)

- 16-Channel or better
- ADC: 12 bit
- Should be 0V to 5V analog input voltage range
- Easy to interface with all microprocessors

2. Digital to Analog Converter Module(01-No)

- One number, 8-BIT programmable digital to analog converter.
- Buffered output.
- Unipolar or bipolar outputs by jumper selection.
- In unipolar mode output is 0-5V DC. In bipolar mode, the output is $\pm 2.5V$ DC.
- 8 LEDs monitor the status of DAC

3. Temperature Control Trainer(01-No)

- K-type thermocouple
- Signal conditioning circuits
- Built in ADC
- Programmable 230V AC relay
- Borosilicate jar, 350W mini heater, thermometer.
- All the circuitry should be assembled in single PCB.
- Test points should be provided at appropriate places.

4. Dual Digital to Analog Converter Module(01-No)

- 2 nos. of 8bit DACs
- 8 LED indicators per DAC to monitor the status of each bit
- Provision to connect to Oscilloscope
- 4-pin Jones Plug to connect to Microprocessor power supply
- FRC connector to interface with Microprocessor / Microcontrollers

5. Dual Slope Analog to Digital Converter Module(01-No)

- 12 bit ADC – 1No.
- Microprocessor / microcontroller interfacing circuit
- 4 pin Jones plug to connect power supply
- FRC connector Interfacing through

6. Comparator Interface Module(01-No)

- Row of four LED's to simulate four levels.
- Four momentary switches simulate request keys for each levels.

7. Keypad Display Interface Module(01-No)

- 16 robust keys should be used.
- Keys are arranged in 4 X 4 matrix
- Statuses of keys are logged on an 8 BIT port.
- Programmable 8 bit LED port.
- Built in power supply.

8. Calculator Interface Module(01-No)

- Key pad Interfacing circuit
- Interfacing through FRC connector
- 4 pin Jones plug to connect power supply

9. Logic Controller Interface Module(01-No)

- DPDT Switches to simulate the Inputs – 8 Nos
- LED to verify the outputs – 8 Nos
- Pulsars as ACK & STROBE Inputs – 2Nos.
- Input, Output and Databus Terminals.
- Terminals for Port-A, Port-B, Port-C

10. Tone Generator Interface Module(01-No)

- Different frequency range tones
- Speaker and Audio board Interfacing circuits
- Interfacing through FRC connector
- 4 pin Jones plug to connect with controller power supply

11. Real Time Clock Generator Module(01-No)

- 1MHz Crystal

- Hours and minutes display
- 12. Traffic Light Interface Module(01-No)**
 - Interface electronics
 - 12 LED's simulate traffic signal (red, green, amber) for 4 directions
 - 28 LED's simulate visual display for movement of traffic in each direction.
 - 4 opto-electric (input) sensors used to simulate flow of traffic in each direction.
- 13. Stepper Motor Interface Module(01-No)**
 - Four 3Kg/cm² Stepper motor supplied.
 - Interface electronics included.
- 14. Display Interface Module(01-No)**
 - 4 Digit Seven Segment Display Module
 - 16 x 2 LCD Interface Module
- 15. DC Motor Speed Control Interface Module(01-No)**
 - One number, 8-BIT programmable digital to analog converter.
 - Buffered output.
 - Unipolar outputs at 0-5V DC
 - 8 LEDs monitor the status of DAC.
 - PMDC motor with driver circuit
 - Assembled in an elegant sloping cabinet.
 - Built in power supply.

(iv) Logic Analyzer:

**32 CHANNEL LOGIC ANALYZER WITH TFT COLOUR LCD /LED DISPLAY
DETAILED SPECIFICATIONS**

- Large scale integrated circuit, FPGA, SOPC, high speed & large memory, Simple & clear front panel design.
- 5'6" or better TFT color LCD with clear graph interface, convenient operation.
- Perfect functions of start, trigger and delay to track and take the concerned data and timing effectively.
- A fast and effective debugging tool for hardware and software of MCU.
- Data measuring tool for the logical state analysis and timing analysis of digital circuit.
- RS-232 & USB Interface.
- Sample Rate timing rate: 1 MHz ~ 100 MHz state rate: 1 MHz ~ 100 MHz or better
- Display 8 channels of timing waveforms or 18 rows of state data
- Graph Controlling horizontal zooming : 1~999 times
- Cursor Control Measurement Cursor, Trigger Cursor, Search Cursor.
- Measurement Cursor dynamic display of data and time difference between two cursors
- Trigger Cursor all sample points satisfied with trigger state.
- Input Characteristics : Input Channel 32 data channels, 2 external clock channels o Threshold Voltage 6 independent and adjustable threshold voltages Range -6 V ~ +6 V, Resolution: 10m V or better.
- Input Range 500mVpp ~ 20Vpp
- Input Impedance > 100kΩ o Input Capacitance < 8pf
- Input Protection maximum input voltage±40 V with undamaged
- Trigger Characteristics : Start Condition 32 bits start-bit, 32 bits start-compare word
- Trigger Condition 32 bits trigger-bit, 32 bits trigger-compare word
- Trigger Restriction >, =, < o Event Count 1 ~ 999 o Trigger Selection On / Off
- Storage Delay 1 ~ 260000 sampling periods
- Sample / Storage Characteristics : Timing Sample Rate 1 Hz ~ 100 MHz, internal clock
- State Sample Rate 1 Hz ~ 35 MHz, external clock clk 1, external clock clk 2

- Sample Phase rise edge, fall edge
- Sample Mode single sample, continuous sample o Memory Depth 256 k bits / channel or better.
- Noise filter: Support hardware glitch filter with 1or 2 sampling width
- Code Rate: Frequency: 1Hz ~ 50Mhz [cycle 20ns ~ 1s] or better.
- Resolution : 10ns or better
- General Power : AC 100 ~ 240V, 45 ~ 65Hz,
- Circuit manual must be provided
- All component number should be clearly displayed on chip/component.

(v) Digital Trainer Kit :

DIGITAL BREAD BOARD TRAINER KIT DETAILED SPECIFICATIONS (15-No)

- Provision for 15 or more Logic Level buffered input using Push Switch with dual color indication Led
- Provision for 15 or more Logic Level or more Output indicator indicating Hi, Lo, Pulse, HI-Z
- Should have function generator 0-10KHz with steps rotated switch, Sinewave Square Triangle with Amplitude, Frequency & Offset adjustment pots or more.
- Should have TTL Clock generator 1Hz,10Hz,100Hz,1KHz,10KHz,100KHz,1MHz or more
- Should have Manual Pulsar for Logic High & Logic Low
- Should have Logic Probe Indicator In Led & Seven Segment Display or better.
- Should have 2 numbers of 7-segment BCD display or more.
- Should have 200KHz TTL Frequency counter displaying in 7 Segment Display, -1K- 1M Potentiometer or better
- Provision for Continuity Tester with Buzzer sound.
- Provision for Variable DC Supply 0 to +30V/100mA, 0 to -30V/100mA or more.
- Provision for Fixed DC Supply+15V/200mA, -15V/200mA,+5V/500mA or more
- Provision for AC Supply 18-0-18/100mA or more.
- Protection circuit must be provided for DC source.
- Should have1660 Tie Points Bread Board Module or better
- Provision for Four nos of DPM to measure Voltage 0-200mV, 2V, 20V, 200VDC (with LED Display) & Current (with LED Display) range 0-2mA, 20mA,200mA,2A or better..
- All inputs & Outputs are provided to be in 2mm banana Socket.
- 230V Ac power input Socket, Power Chord, with ON/OFF Switch.
- Repairable patch cord should be provided
- User manual and Circuit manual must be provided
- All component should be number clearly display

(vi) Software Defined radio with built-in embedded computer :

RF Transceiver

- One Transmit, One Receive Channel (with separate Tuning Frequencies)
- Tuning Range : 350 MHz - 3.5 GHz
- LO step size : 2.4 Hz
- Tunable Channel Bandwidth : 200 KHz - 20 MHz
- Integrated DACs (Tx) : 12-bit
- Integrated ADCs (Rx) : 12-bit
- Received Signal Strength : 100 dB (± 2 dB)
- Internal I/Q Correction and Calibration

Antenna

- Frequency Range : 824-894 MHz and 1710- 2170MHz
- Connector Type : SMA

FPGA

- Logic Cells : 28k
- Block RAM : 2.1Mb
- DSP Slices : 80

SDR Processing System

- Single-core ARM® Cortex™-A9 MPCore™ @ 667 MHz
- Streams up to 4MSPS with no dropped samples

Embedded Processing System

- Quad-core 64-bit @ 1.4GHz

Memory

- DDR3L
- 1066 Mbps (16-bit Interface)
- 512 Mbytes

Serial Flash

- 32 Mbyte
- Quad I/O provides throughput up to 54 Mbps
- **RAM** : 4 GB LPDDR2 SDRAM
- 2.0 USB Ports : 3 No.
- HDMI Port : 1 No.
- 14" Color Monitor
- Wireless Keyboard
- Wireless Mouse

List of Sample Tutorials possible with the System**Analog Communication**

- Amplitude Modulation
- Amplitude Demodulation
- Double Side Band with Suppressed Carrier (DSBSC) Modulation
- Double Side Band with Suppressed Carrier (DSBSC) Demodulation
- Single Side Band with Suppressed Carrier (SSBSC) Modulation
- Single Side Band with Suppressed Carrier (SSBSC) Demodulation
- Frequency Modulation
- Frequency Demodulation
- Pulse Amplitude Modulation
- Pulse Amplitude Demodulation

Digital communication

- Sampling and Quantization.
- Amplitude Shift Keying(ASK) Generation.
- Amplitude Shift Keying(ASK) Demodulation.
- Frequency Shift Keying(FSK) Generation.
- Frequency Shift Keying(FSK) Demodulation.
- Binary Phase Shift Keying (BPSK) Generation.
- Binary Phase Shift Keying(BPSK) Demodulation.
- Quadrature Phase Shift Keying(QPSK) Generation
- Quadrature Phase Shift Keying(QPSK) Demodulation
- Differential Phase Shift Keying(DPSK) Generation
- Differential Phase Shift Keying(DPSK) Demodulation
- Digital Quadrature Amplitude(DQAM) Modulation
- Digital Quadrature Amplitude(DQAM) Demodulation etc.

(vii) Digital Communication Trainer Kit:

- (i) PAM, PPM, PWM and Line Coding kits, **Qty: 02 Nos.**
- (ii) 2.2 Noise Generator kit, **Qty: 02 Nos.**
- (iii) 2.3 ASK, FSK, BPSK, DBPSK Modulator and demodulator kit, **Qty: 02 Nos.**
- (iv) 2.4 QPSK, OQPSK, DQPSK Modulator and demodulator kit, **Qty: 02 Nos.**
- (v) 2.5 Sampling & Reconstruction training kit, **Qty: 02 Nos.**
- (vi) 2.6 TDM Pulse Amplitude Modulation/Demodulation kits, **Qty: 02 Nos.**
- (vii) 2.7 Minimum Shift Keying Modulation & demodulation kit, **Qty: 01 Nos.**
- (viii) 2.8 PCM, DPCM, CVSD Modulator and Demodulator kit, **Qty: 02 Nos.**
- (ix) 2.9 4-Channel TDM-PCM Transmitter and Receiver kit, **Qty: 01 No.**

(viii) Digital Storage Oscilloscope

- (1) Analog bandwidth: 100 MHz
- (2) 4 analog channels
- (3) Real Time Sampling Rate 8 GSa/s (single-channel), 4 GSa/s (half-channel), 2 GSa/s (all channels)
- (4) Memory depth 100 Mpts (single-channel), 50 Mpts (half-channel), 25 Mpts (all channels)
- (5) Vertical Sensitivity 500 $\mu\text{V}/\text{div}$ ~ 10 V/div
- (6) Horizontal Scale : 5 ns/div ~ 1 ks/div
- (7) Built-in Digital Voltmeter
- (8) High waveform capture rate, it should be minimum 500,000 wfm/s
- (9) Should be minimum Auto measurement of 40 waveform parameters; full-memory hardware measurement function
- (10) Advanced Math Function differentiation, integration, AND, R, NOT, +, -, X, FFT
- (11) Minimum 9 inch multi-touch screen, 256-level intensity grading display, with color persistence should be available
- (12) Multiple interfaces should be available: USB HOST&DEVICE, LAN(LXI), HDMI, TRIG OUT
- (13) Bandwidth Upgradability : up to 350MHz or higher

(ix) Digital Multimeter:

- 1. Count: 4000 count with LCD/LED display
- 2. DC voltage: 0.1 mV to 1000V
- 3. AC Voltage: 0.1 mV to 750 V
- 4. DC Current: 0.1 μA to 20 A
- 5. AC Current: 0.1 μA to 20 A
- 6. Resistance: 0.1 to 40 M Ω
- 7. Capacitance: 10 pF to 200 μF
- 8. Frequency: 0.1 Hz to 20 MHz
- 9. Temperature: -40° C to 1000° C
- 10. Over voltage indicator
- 11. **Note:** All needful accessories e.g. DVD/CD, pen drive, software, cable/chords, batteries etc. must be supplied with the above written items.

(x) RF Signal Generator:

Quoted item can have specifications better than the list given below.

Basic Specifications

Frequency	:	9KHz to 3 GHz
Frequency Resolution	:	0.01Hz
Level Output	:	-110dBm to +13dBm

Phase Noise : -110dBc/Hz@1GHz
 Level Accuracy : 0.7dB
 Harmonics : CW 1MHz ≤ 3.2GHz, level +13dBm: ≤ 30dBc

Reverse Power

Max. Permissible DC Volt : 50V
 Max reverse input power : 1MHz ≤ f ≤ 3.2GHz: +30-dBm

Internal Modulation Generation

Waveform : Sine/Square
 Frequency Sine : upto 200 KHz
 Square/Triangle : 20 KHz

Modulation : AM / FM / PM / Pulse

Pulse Generator

Pulse Mode : Single or double
 Pulse Period : 40nS to 170 S (resolution 10 nS)
 Pulse Width : 20nS to (170-20) S

IQ Modulation features

Modulation Source : External or internal
 Bandwidth : Base Band I or Q ≤ 60MHz
 EVM : QPSK, Root Cosine Filter (a=0.22), 4 or 5
 MSps ≤ 2%

Output terminals : N type connector for RF output
 BNC connector for LF output

Accessories : N-BNC converter,
 RF Attenuator (DC-4 GHZ, N-Type Jack to N-Type Plug,
 30 dB, 2W)

Warranty : **3 years**

Annexure 4**Technical Compliance of the bidder with reference to the
'Specification of Equipments'****Name and model no of offered goods/equipment:**

Item	Technical specification from NIT Raipur	Features available in equipments Yes or No	Any deviation from Specification, if any	Corresponding part number /datasheet/page no in broacher in support of specification	Comment of Technical Committee , NIT Raipur

Signature of Bidder

Annexure-5

Price Schedule form: Price Schedule for Goods Being Offered from India/Abroad in INR
(Separate form to be used for each item offered)

Name of the Bidder/Tenderer:

Name & Model No of offered good:

Tender No.:

S. No.	Details	Price per Unit in INR
1	Ex-works, Ex-warehouse, Ex-show room off the shelf price	
2	GST payable, if contract is awarded(%)	C.G.S.T.(%)
		S.G.S.T. (%)
		I.G.S.T. (%)
3	Packing & forwarding up to station of dispatch, if any	
4	Charges for inland transportation, insurance to ultimate destination i.e. NIT, Raipur, if any	
5	Installation, Commissioning and training Charges, If any	
6.	Any other charges (Please specify)	
Total Price (Sum of S.No 1 to 6) FOR NIT RAIPUR		

Total Bid price in Indian currency_____

In words: _____

Name_____

Business Address

Note:

- The cost of optional items shall be indicated separately.
- Price should be quoted in prescribed format only as per above.
- None of the item will be used for research purpose and standard GST rates will be applied. Kindly quote GST rate applicable as per HSN Code of the product. Concessional GST certificate will not be provided.

Seal & Signature of Bidder

Annexure-6

Price Schedule Form: Price schedule for goods being offered from abroad in currency other than INR

(Separate form to be used for each item offered)

Name of the Bidder/Tenderer:

Name & Model No of offered good:

Tender No.:

S. No.		Price per unit in ()
1	Country of origin	
2	FOB (named port of shipment) Or FCA (named place of delivery)	
3	Freight and Insurance up to Indian Airport/port	
4	Total Price at Indian Airport /port (2+3)	
5	**Custom charges (please mentioned %)	
6	Custom clearance and other charges if any (with breakup)	
7	Inland Charges for Insurance & transportation to NIT Raipur	
8	Installation, commissioning and training Charges, if any	
9	If any other charges (Please Specify)	
	Total Price (FOR NIT Raipur) (Sum of S. No 1 to 9)	

**** NIT Raipur have DSIR Registration Certificate.**

Note: Kindly mention GST if applicable at any stage under S.No. 9 of the above table.

Total Bid price in foreign currency: -----words: _____

(a) Indian agents name & address _____

(b) The cost of optional items shall be indicated separately-----

Annexure-7**DEVIATION STATEMENT FORM**

The following are the particulars of deviations from the requirements of the tender specifications:

CLAUSE	DEVIATION	REMARKS (INCLUDING JUSTIFICATION)

Signature of Bidder

Annexure-8(Please put this annexure at the top of the tender document)**Bidder's information & Check list**

1. Name of the Firm:

2. Type of the firm: (Proprietorship, Pvt Ltd, Public Ltd, Partnership etc.)

3. Address of the firm:

4. Contact detail: Phone No.:

Mob No. :

Fax No.

E mail:

5. Name of the authorised signatory:

6. Bank details of the firm:

Account No.:

IFSC Code:

Name of the Bank:

Branch:

Check List(Please enclose the copy of the following & tick as per applicability)

1. Proof of registration of the firm:

2. Authorisation certificate of dealership:

3. PAN card in Firm's name:

4. GST Registration Certificate:

5. Proof of registration with any central govt . organisation :

6. Purchase orders issued by any central govt organisation.

Signature of Bidder