



**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA – 769 008, ODISHA**

**Advertised Tender Enquiry**

**Department: Electronics and Communication Engineering**

**Tender Notice No: NITR/PW/EC/2021/225**

**Date: 19/01/2021**

**IMPORTANT DATES**

**To**

Bidding  
Through  
e- Procurement module of  
CPP Portal

<https://eprocure.gov.in/eprocure/app>

<b>Event</b>	<b>Date</b>	<b>Time</b>
Pre-bid meeting	<b>NA</b>	<b>NA</b>
Last date of submission of bid	<b>24/03/2021</b>	<b>03:00 PM</b>
Date of opening of techno-commercial bid	<b>25/03/2021</b>	<b>03:00 PM</b>

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send, your offer with prices and complete terms within the time mentioned above.

For any clarification:

Yours sincerely,

**Attention:**  
**Dr. Subrata Maiti (Assistant Professor)**  
**Department of Electronics and Communication Engineering,**  
**National Institute of Technology,**  
**Rourkela – 769 008**  
**Phone: 0661 – 2462468**  
**E-mail: [smaiti@nitrkl.ac.in](mailto:smaiti@nitrkl.ac.in)**

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**Dr. Subrata Maiti**  
(Assistant Professor)  
Electronics and Communication Engineering  
NIT Rourkela

**Encl:**

- 1) Schedule of requirement, specifications, dates etc.**
- 2) Bid document containing detail terms and conditions.**

## 1. Schedule of requirements

SL.NO	Description of Goods/Service	Quantity
1.	Vector Signal Analyzer (Up to 40GHz frequency) with all accessories	1 Unit

2. Specifications and allied Technical Details: As per the specification attached in the **Annexure-II**

3. Format of Quotation (tick appropriate box)

It is a two-part with separate techno-commercial and price bids.

4. The bid should be submitted through <https://eprocure.gov.in/eprocure/app>

5. Quotations should be valid for a period of **90 days** from the date of opening of techno-commercial bid.

6. Some important dates:

i.	Pre-bid Conference	Date:	<b>NA</b>	<b>NA</b>
ii.	Last date for submission of bid	Date:	<b>24/03/2021</b>	<b>03:00 PM</b>
iii.	Date of opening of techno- commercial bid	Date:	<b>25/03/2021</b>	<b>03:00 PM</b>

7. **Warranty:** Three-year standard warranty.

8. **GST:** GST should be charge according to applicable rates.

9. **Tender Cost:** Tender cost (Non- refundable) in the shape of Demand Draft for **INR 500/- (Rupees Five Hundred only)** in favor of "Director, NIT Rourkela" Payable at Rourkela from any Scheduled Commercial Bank except Co-operative and Gramin bank. Tender Cost should reach physically through speed post/ register post/courier, containing in an envelope & superscripted with subject, tender reference number addressing to **Registrar, NIT Rourkela- 769008, Odisha; on or before 25/03/2021 at 03:00 PM.**

10. **Bid Security:** It is mandatory to submit the "**Bid Security Declaration**" form as mentioned in **Annexure I**, failing which the bid will be summarily rejected.

11. **Performance Security: 3 % of the contract value** should be deposited to the Institute within 15 days of issues of Purchase Order, in shape of Demand Draft (DD)/Bank Guarantee in favor of "Director, NIT Rourkela and payable at Rourkela" from any Scheduled Commercial Bank except Co-operative and Gramin bank. And Performance security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the suppliers including warranty obligation.

12. Please go through the enclosed "bid document" carefully for other bidding instructions.

13. Please send your quotations through: <https://eprocure.gov.in/eprocure/app>

### 14. Techno-commercial Bid Evaluation Criteria:

- I. At least two Purchase Orders from IIT/NIT/IISER/reputed Indian institute/Govt. R&D organizations must be provided where the above equipment and accessories (**Annexure-II**) have been supplied in last five years. Scan copies of the minimum two purchase orders of the above equipment and accessories (**Annexure-II**) must be enclosed along with the technical bid.
- II. If the supplier is Original Equipment Manufacturer (OEM) should have own service center in India. The bidders must enclose details of their infrastructure with reference to locations and technical manpower, availability of inventory spares etc. A valid GST registration certificate of OEM should be submitted along with bid.

- III. Scanned copies of the technical brochure of the above equipment and accessories (**Annexure-II**) given in the quotation must be included in the technical bid.
- IV. Design and schematic diagram of the equipment should be provided for better understanding.
- V. Web references must be provided along with the technical bid.
- VI. Point wise technical compliance along with any deviation of the mentioned specifications (**Annexure-II**) must be indicated along with technical documents.
- VII. Make and model no. should be mentioned in the technical bid.

**Financial Bid Evaluation Criteria:**

- i. Final Price comparison for the award of contract to decide Lowest price (L1) will be made based on the overall prices quoted for the item in BOQ 1.01.
  - ii. Adds on feature i.e. Noise figure measurement option (item in BOQ 1.02) would be purchased based on the availability of fund. The contract for the item in BOQ 1.02 will be given to the same L1 bidder for BOQ 1.01.
- 15.** For technical details, you may contact

<p><b>Dr. Subrata Maiti (Assistant Professor)</b> <b>Department of Electronics and Communication Engineering,</b> <b>National Institute of Technology, Rourkela – 769 008</b> <b>Phone: 0661 – 2462468</b> <b>E-mail: <a href="mailto:smaiti@nitrkl.ac.in">smaiti@nitrkl.ac.in</a></b></p>
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**NB: Please furnish your Dealership Certificate (must) and Proprietary Nature Certificate (If applicable)**



# NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA – 769 008, ODISHA

## BID DOCUMENT

### 1. Instructions to the bidders

- 1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Rourkela– 769008, Odisha, from the intending bidders for supply of the goods/stores/equipment for the Institute as detailed in the enquiry letter.
- 1.2 The bidders should quote their offer/rates in **BOQ** in clear terms without ambiguity.
- 1.3 In Case of any discrepancy between the rate in figures and that in words, the rate in words will be accepted as correct.
- 1.4 The last date for receipt of the bid is marked in the tender document.
- 1.5 The bids should be uploaded in <https://eprocure.gov.in/eprocure/app>. Please follow the guidelines of the site.
- 1.6 If a prospective bidder requires any clarification in regard to the bidding documents, s/he may make a request the concerned officer or faculty member at least 15 days before the deadline for receipt of bids.
- 1.7 Bid received after deadline of receipt indicated in para 1.4 above, shall not be taken in to consideration.
- 1.8 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.
- 1.9 (In respect of high value plant, machinery etc. of a complex and technical nature). The bids may be submitted in two parts, viz., techno-commercial bid and financial bid.
- 1.10 The bidder has to sign in full at all pages of the scanned part of the bidding document. No over- writing in those pages is acceptable.
- 1.11 If any bidder does not fulfil technical specification, his/her eligibility will be cancelled even if his/her price got L1 status.
- 1.12 Bidders registered with any of the following agencies/ bodies as per Public procurement policy for Micro & Small Enterprises (MSE) order 2012 are exempted categories from payment of EMD provided that the registration Certificate issued by any one of these below mentioned agencies must be valid as on close date of tender. Micro small or medium enterprises who have applied for registration or renewal of registration with any of these agencies/bodies but have not obtained the valid Certificate as on close date of tender are not eligible for exemption.
  - i) Khadi and Village Industries Commission (KVIC)
  - ii) National Small Industries Corporation (NSIC)
  - iii) Any other body specified by Ministry of MSME/GOI

## 2. Conditions of the bid

- 2.1 The rates quoted should preferably be net, inclusive of packing, forwarding, freight, Insurance and all other incidental charges including taxes. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or ad-valorem rate must be specified. Packing, forwarding, freight, etc., when quotes separately are reimbursable at actuals. If external agencies are employed, their receipts must be enclosed with the invoice.
- 2.2 Duties and Taxes are to be quoted separately. Ad-valorem rates thereof should be clearly indicated with reference to the relevant Acts and Rules.

**It may be noted that the Institute is availing custom duty exemption in terms of Notification No. 51/96 – Customs dt. 23.07.1996, Notification No. - 47/2017- Integrated Tax (Rate) dt. 14.11.2017 and Notification No- 45/2017 – Integrated tax (Rate) dt. 14/11/2017 & Notification No. - 45/2017- Central tax (Rate) dt. 14.11.2017, Notification No. - 45/2017- Union Territory Tax (Rate) dt. 14/11/2017 [Vide DSIR, Ministry of Science and Technology, Government of India, Registration No.: TU/V/RG- CDE (227)/2016, dated: 13.11.2018]**

- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be reached within **90 days** from the date of placement of the supply of order under the risk and arrangement of the bidder and offers with delivery beyond the above period shall be treated as unresponsive. In case the delivery time is higher, the same must be mentioned clearly in the quotation.
- 2.4 The bid should remain valid for a period of **90 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation.
- 2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.6 The goods offered should strictly conform to the specification and technical details as mentioned in schedule of requirements in the tender documents.
- 2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.8 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.9 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT, Rourkela to recover liquidated damage from the firm at the rate of 1 percent of the value of undelivered goods per month or part thereof, subject to a maximum of 5 percent of the value of undelivered goods. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.10 The successful bidder may be required to execute a contract, where applicable.
- 2.11 The bidder has to furnish up to date GST and Income Tax Clearance Certificate along with the bid.
- 2.12 Purchase order / Work order shall be placed on the bidding firm(s). In case of deviation to this, if any, the bidding firm should produce any such sufficient documents/credentials i.e, Agreements, MOUs, Arrangements etc. with the third party/ OEM to satisfy the buyer. A consent letter from the third party/ OEM to that effect must be enclosed along with the bidding documents.

- 2.13 Payment (*100 percent*) will be made by Account Payee Cheque/Bank Draft, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, where applicable, whichever is later/latest.
- 2.14 State Bank of India is the sole Banking partner for NIT Rourkela for operation of LC (Letter of Credit).
- 2.15 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT, and Rourkela shall be final.
- 2.16 The bid document/resultant contract will be interpreted under Indian Laws.

BID SECURITY DECLARATION

Tender Ref. No.: \_\_\_\_\_ Dated \_\_\_\_\_

Tender ID : \_\_\_\_\_

To

**The Registrar,  
National Institute of Technology, Rourkela  
Sundargarh, Odisha-769008**

The undersigned, declare that I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration. I/We accept that I/We may be disqualified/suspended from bidding for any tender /contract in your Institute (NIT Rourkela) for a period of **Five Years** from the date of notification of present tender, if I am /We are in a breach of any obligation under the bid conditions as under, if I/We

- a) Withdraw/modify/amend, impair or derogate the tender/bids, during the period of bid validity specified in the form of Bid; or
- b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
  - (i) fail or refuse to execute the contract, if required, or
  - (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

**Signed:** (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

**Name:** (insert complete name of person signing the Bid Securing Declaration) Duly authorized to sign the bid for and on behalf of (insert complete name of Bidder)

Dated on \_\_\_\_\_ day of \_\_\_\_\_ (insert date of signing) Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

**DETAILED TECHNICAL SPECIFICATION****Vector Signal Analyzer (Up to 40 GHz frequency) with all Accessories:**

Sealed tender bids are invited from reputed/authorized vendors/companies for Vector Signal Analyzer (Up to 40GHz frequency) *with all required accessories* and with the following tender specifications.

<b>Sl.NO</b>	<b>Parameter</b>	<b>Final Tender Specification</b>
<b>Standard Features:</b>		
1.	Frequency range	10 KHz to 40 GHz or better
2.	Frequency Span	1 MHz to highest frequency of operation
3.	Resolution BW	1 Hz to 8 MHz
4.	Analysis BW	BW >= 500 MHz
5.	Displayed Average Noise Level (DANL)	DANL with Preamplifier ON: 50 MHz to 13GHz: -158 dBm, (-161 dBm typ.) 13 to 26.5 GHz: -158 dBm, (-161 dBm typ.) 26.5 to 40 GHz: -152 dBm, (-156 dBm typ.)
6.	Pre-Amplifier	Yes
7.	SSB Phase Noise @ 1GHz with 1KHz offset from carrier	-120 dBc/ Hz
8.	Phase noise @ 1GHz with 10 kHz offset from carrier	-123 dBc/Hz
9.	1 dB Compression at input of Mixer	0 dBm at 26.5 to 40 GHz
10.	Vector Signal Analysis capabilities	Multi-domain measurements: Time and Frequency (spectrum) measurements. Demodulate standard waveforms for at least the Analysis BW. Capability to demodulate the digital modulated signals: 16QAM, 32QAM, 64QAM, 128QAM, 256QAM. Filter types: Raised Cosine, Root raised cosine, Gaussian, Rectangular, user definable filters. Demodulate and display 5G NR signals uplink and downlink for both TDD/FDD, and other important measurements. Spectrogram display capability to monitor the RF spectrum for intermittent or interfering signals.
11.	5G NR Analysis capability	Should comply to 3GPP TS 38 series v16.0.0 or higher with free upgradation for latest specification offered by the vendor for one year after the installation of instruments.



		Over the Air (OTA) transmitter testing capabilities
12.	Radar Analysis capabilities	Pulse analysis, Frequency Analysis, chirp analysis, etc.
13.	I-Q analyzer recording length	>= 0.8 GSa
14.	Noise Figure measurement option (1 GHz to 40 GHz)	Noise figure measurement option from 1 GHz to 40 GHz, with all the necessary accessories like noise source, etc. to be provided. VSWR<1.7,  <b>This is an optional feature. The price must be quoted separately at BOQ 1.02.</b>
15.	Interface	USB, LAN
16.	Accessories to be supplied:	a. 2.4 mm female to 2.92mm male adapter (1no.) b. 2.4 mm female to 2.92mm female adapter (1no.) c. DC Block (40GHz)
17.	Display	Has to be inbuilt
18.	Cables	20 cm: 2 cables (with appropriate connectors to the instrument) 50 cm: 2 cables (with appropriate connectors to the instrument)
19.	Product will be supported in the market for:	Next 10 years (Till Jan 01 2030)
<b>General Features:</b>		
20.	Software	Equipment shall be provided with all necessary software i.e. Operating software, calibration etc. One year upgradation should be free of cost (bidder should provide full details.)
21.	Language	Display and instructions should be in English language only.
22.	Calibration certificate/ Manufacturer's Test Certificate	Calibration certificate/ Manufacturer's Test Certificate should be provided.
23.	Operating temperature and Humidity	Operating temperature & humidity: Equipment shall be able to operate up from 5 to 50°C temperature and Relative Humidity: 90% at + 40°C

<b>Other Requirements</b>	
<b>Demonstration of instrument performance.</b>	The supplier should demonstrate the standard measurement parameter values as well as facility available in the in the instrument such as Dynamic Range, Noise Floor, Vector Signal Analysis capabilities, 5G NR Analysis capability, Radar Analysis capabilities, DANL, and so on at the time of acceptance. The acceptance would be subject to meeting the required criterion.
<b>Manuals</b>	1 set of detailed operation, servicing and Programming manual should be provided in both soft form as well as Hard copy. Language should be English only.
<b>Installation</b>	The satisfactory installation to the full specifications of the machine with all accessories at NIT Rourkela campus. Any additional equipment/accessory for the installation of the system should be quoted invariably. NIT Rourkela will provide only space and electrical connection along with necessary solvents for running the equipment.
<b>Training</b>	Supplier should provide a comprehensive and free training to NIT Rourkela engineers for at least 3 working days on operation and preventive maintenance of the VSA.
<b>Warranty</b>	03 Year Standard Warranty (Front line service to be done at customer place & if any cards/modules are to be replaced can be taken to service center & back to bench service charges to be borne by Supplier). The price for 02 Years extension of warranty must be optionally quoted. The Original End Manufacturer (OEM) should have Calibration and other maintenance support facility located in India. The OEM should have NABL accredited calibration Lab in India.
The complete system should be compatible to 220-230V AC 50Hz, single phase power supply. The vendor should specify the power requirements for all the components in the technical quotation.	
Vendor should provide the tools and Spare part for smooth functioning of the machine for 10-15 years.	

### **Guarantee / Warranty and after sales technical support**

The tender must be quoted with three year on-site comprehensive Warranty/Guarantee commencing from the date of complete and satisfactory installation of the equipment against the defect of any manufacturing, workmanship and poor quality of the components. The bidder also must agree and issue a certificate stating that technical query will be responded within 7 working days and the support will be provided within 30 working days from the date of reporting of the technical failure for down time free operation of the instrument.

Operation and service manual in English (electronic and hard copy) should be provided with all the equipment and components.

In the technical details, specify clearly about the kind of service/maintenance required for the system. Also mention that whether the service has to be carried out by a company engineer or it can be carried by trained service personnel within India.

The complete training of all measurement options should be free for NIT Rourkela user staff/students' members, onsite.

Enclose pre-installation guide for the details on electrical power, space and other for all components and essential accessories.

Bid should include all other essential auxiliary equipment and spares for its smooth operation for 3-5 years from date of installation (please provide list with the details).

All sample handling tool-kits/consumables should be provided. Wherever, consumables and other items required to handle the system while operating all measurement options, must be quoted separately for enough quantity.

Quote separately for all optional items/accessories, optical components and consumables which are not explicitly specified above however required for smooth functioning of the machines.

A list of institutes (with details) in India where the similar equipment (with all options in this tender) has been sold or is under operation should be provided. Prospective vendor should clearly mention the type of measurement options (along with the main system) supplied to these institutes.

The manufacturer has to stand guarantee for the relocation of the system from the present campus of NIT Rourkela to any other place if any in future.