



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008 (ODISHA)**

An Institute of National Importance under Ministry of Education, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW/EC/2021/225

Dated: 19/01/2021

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **VECTOR SIGNAL ANALYZER (Up to 40GHz frequency) equipment with all Accessories** at NIT Rourkela.

Last date of Submission of Bid : **15/02/2021 by 03:00 PM**

Opening date of techno-commercial Bid : **17/02/2021 at 03:00 PM**

For Details: https://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx

Contact: Dr. Subrata Maiti (Assistant Professor)
Department of Electronics & Communication Engineering,
Phone No.: +91-661-2462468
Email ID: smaiti@nitrkl.ac.in

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

**Sd/-
REGISTRAR**



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008, ODISHA**

OPEN TENDER NOTICE NO.: NITR/PW/EC/2021/225

Dated: 19/01/2021

Procurement of Vector Signal Analyzer with all accessories

SL.NO	Description of Goods/Service	Quantity
1.	VECTOR SIGNAL ANALYZER (Up to 40GHz frequency) equipment with all Accessories	1 unit

1. Quantity required : **As mentioned above (All information regarding technical specification provided in the Annexure-II)**
2. Delivery : Within **90 days** from the date of purchase order
3. **Last Date of submission of Bid : 15/02/2021 by 03:00 PM**
4. **Date of opening of techno-commercial bid : 17/02/2021 at 03:00 PM**
5. The firm should not have been black listed at any time.
6. The submission of following bids by the tenderer should be through <https://eprocure.gov.in/eprocure/app>. Please follow the guidelines as per the portal.

Procurement of VECTOR SIGNAL ANALYZER (Up to 40 GHz frequency) equipment with all Accessories

**(Open Tender Notice No.: NITR/PW/EC/2021/225 Dated: 19/01/2021)
Due on 15/02/2021 by 03.00 PM**

7. **Liquidated damage clause** will be charged for any delay in supply of goods.
8. The validity of the tender shall be **90 days** from the date of opening of the techno-commercial bids.
9. Detailed advertisement including all tender documents is also available in our website at https://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx
10. NIT reserves the right to qualify or deny prequalification of any or all applicants without assigning any reasons.

**REGISTRAR
NIT, Rourkela
Fax No- 0661-2462022
Ph. No -0661-2462021**

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.

Sl.NO	Parameter	Final Tender Specification
Standard Features:		
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 \geq 500 MHz
5.	Displayed Average Noise Level (DANL)	DANL with Pre-amplifier 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, This is an optional feature. The price must be quoted separately at BOQ 1.02.
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)
General Features:		
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: 95% at + 25°C /40°C

Other Requirements	
Demonstration of instrument performance.	The supplier should demonstrate the standard measurement parameter values as well as facility available 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.
Manuals	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.
Installation	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.
Training	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.
Warranty	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.