



NATIONAL INSTITUTE OF TECHNOLOGY

ROURKELA-769008 (ODISHA)

An Institute of National Importance under Ministry of HRD, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW-SR/EC/2019/186

Dated: 24/12/2019

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **Software Defined Radio Module with all Accessories** at NIT Rourkela.

Last date of Submission of Bid : **14/01/2020 by 03:00 PM**

Opening date of techno-commercial Bid : **15/01/2020 at 03:00 PM**

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

Contact: Dr. Subrata Maiti, Department of ECE,

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-SR/EC/2019/186

Dated: - 24/12/2019)

Procurement of Software Defined Radio Module with all Accessories at NIT Rourkela.

SL.NO	Description of Goods/Service	Quantity
1.	Software Defined Radio Module with all Accessories (As per the specification mentioned in Annexure-I)	2 pieces

- Quantity required : **As mentioned above (All information regarding technical specification provided in the Annexure-I)**
- Delivery : Within **90 days** from the date of purchase order
- Last Date of submission of Bid : 14/01/2020 by 03:00 PM**
- Date of opening of techno-commercial bid : 15/01/2020 at 03:00 PM**
- The firm should not have been black listed at any time.
- 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 Software Defined Radio Module with all Accessories

**(Open Tender Notice No.: NITR/PW-SR/EC/2019/186 Dated: 24/12/2019) Due on
14/01/2020 by 03:00 PM**

- Liquidated damage clause** will be charged for any delay in supply of goods.
- The validity of the tender shall be **90 days** from the date of opening of the bids.
- Detailed advertisement including all tender documents is also available in our website at http://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**Specifications for Single Software Defined Radio Module with Accessories:**

Sealed tender bids are invited from reputed/authorized vendors/companies for Software Defined Radio Module with following tender specifications.

Sl. No.	Item	Details
1.	RF Front End	
1.1	Frequency Range	10MHz – 6GHz or better
1.2	Total No. of Channels	4 channels or 2 RF Front End Modules with each having 2 channels.
1.3	Independent Tx and Rx	2×2 MIMO, independent two TXs and two RXs
1.4	Bandwidth of Tx or Rx	>=160 MHz
1.5	Rx Noise Figure	<7 dB
1.6	Rx IIP3 (max)	>=4 dBm
1.7	Rx/Tx IQ Imbalance	<-30 dBc
1.8	Tx Power	>= 7 dBm @ 5-6 GHz
2.	SDR Baseband	
2.1	No. of Channels	4
2.2	Frequency Range	DC-6 GHz or better
2.3	ADC	Dual, 14 bit, 200MS/s or better
2.4	DAC	Dual, 16 bit, 800MS/s or better
2.6	Gigabit Streaming	200 MS/s or above
2.7	Fully Coherent MIMO capability	Coherent MIMO Capability should be present
2.8	FPGA	Kintex 7 or better
2.9	Auxiliary Analog and Digital Channel	Auxiliary Analog and Digital Channels should be provided
2.10	GPS Synchronization Option	Should be compatible with a GPS synchronization module
2.11	Interface	Ethernet 1G, 10G, PCIe x4
3.	Other features	
3.1	Accessories	All accessories like power adapters, clock synchronizations modules, 10 Gigabit Ethernet PCIe Adapter Card for desktop, etc. are to be provided for programming/ controlling the SDR with PC
3.2	Software Interface	Matlab/ Python/ C++
3.3	Operating Temperature	0-40°C
3.4	Antenna	Log periodic antenna/ planner antenna covering frequency range of 900 MHz to 6 GHz freq. band

Other Requirements**Demonstration of instrument performance.**

The supplier should demonstrate the standard measurement parameter values as well as basic features available in the in the instrument such working with GNU Radio, transmit-Receive of FM, transmission and reception of known waveforms using GNU radio and SDR at different frequencies across the BW, 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.
Training	Supplier should provide a comprehensive and free training to NIT Rourkela engineers for at least 1 working days on operation and preventive maintenance of the SDR modules.
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 Bidder). The Original End Manufacturer (OEM) should have Calibration and other maintenance support facility located in India. The OEM Should have certified 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 instrument for 5 years.	

Guarantee / Warranty and after sales technical support	
The tender must be quoted with three years 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 21 working days from the date of reporting of the technical failure for down time free	
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 5 years from date of installation (please provide list with the details).	
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.	