

# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

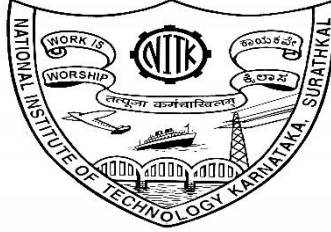
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## NOTICE INVITING QUOTATION

Notification. No: NITK/CSE/MPT/EMBRACE/2024/HF-SDR/572/04

Date: 13-05-2024

Name of Goods	HF SDR Kit
Estimated Amount:	₹ 2,40,000/-
Time for Supply of item after release of Purchase order	7 days
Document Download / Sale Start Date	14-05-2024, 03:00 PM
Clarification Start Date	14-05-2024, 03:00 PM
Clarification End Date	21-05-2024, 03:00 PM
Bid Submission Start Date	14-05-2024, 03:00 PM
Last Date for submission of bids	03-06-2024 before 03.00 PM
Bid Opening Date	04-06-2024, 03:00 PM
Address for Submission of bids	Dr. Mohit P Tahiliani Associate Professor, Dept. of Computer Science & Engineering, NITK – Surathkal, PO Srinivasnagar, Mangalore – 575025 Dakshina Kannada District, Karnataka Contact No. : 0824 -2473410 E-mail : <a href="mailto:tahiliani@nitk.edu.in">tahiliani@nitk.edu.in</a>



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**NOTICE INVITING QUOTATION (NIQ)**

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an Institute Of National Importance Under Ministry of Education Govt of India, imparting Technical Education and engaged in Research Activities. It is proposed to procure the items for the departmental academic/research activities.

Sealed Quotations as per the Price Schedule given in this NIQ are invited for the following items subject to the terms and conditions, from the reputed manufacturers or its authorised dealers so as to reach on or before scheduled date and time. The quotations in the firm's Business letter head should be address to the "Director, NITK, Surathkal". The envelope shall be superscribed with the Quotation Notification Number and the Name of the Goods for which quotation is submitted.

<b>Name of Goods</b>	<b>HF SDR Kit</b>
<b>Estimated Amount:</b>	<b>₹ 2,40,000/-</b>
<b>Time for Supply of item after release of Purchase order</b>	7 days
<b>Document Download / Sale Start Date</b>	14-05-2024, 03:00 PM
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<b>Bid Opening Date</b>	04-06-2024, 03:00 PM

**Sd/-**

**Head of the Department**

Note: Institute shall not be responsible for any postal delay about non-receipt /non-delivery of the bids or due to wrong addressee.

**SECTION-1**  
**Terms and Conditions**

1. The rates should be quoted for preferably FOR destination from supply within India.
2. The bidder shall indicate the excise duty exemption for the goods if applicable.
3. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any. The rate should be quoted in INR only
4. Rate quoted should be inclusive of Testing, commissioning and Installation of equipment and Training.
5. Payment: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier.
6. Guarantee/Warranty period should be specified for the complete period should be specified in section 3 of this tender document.
7. Period requirement for the supply and installation of item should be specified in section 3 of this tender document.
8. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.
9. **Liquidated Damages**: Timely delivery is the essence of the contract and hence if the Supplier fails to deliver Goods within the original/extended delivery period(s) specified in the contract, the Institute will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, **@ 1% per week or part of the week of the delayed period** as pre-estimated damages not exceeding 5% of the contract value without any controversy/dispute of any sort whatsoever of any sort whatsoever.

**SECTION-2**  
**SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS**  
[ To be filled up by the Department / Centre of NITK, Surathkal ]

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Item(s) Name to be Procured	: HF SDR Kit
Brief Specifications of the Item(s) (Attach Additional Sheet if necessary)	: Attached
Quantity	: 01 Kit
Any other details / requirement	: Nil
Warranty Period required	: One Year
Delivery Schedule expected after placement of Purchase order (in Weeks)	: 1 week

**SECTION 3**  
**PRICE SCHEDULE**

[ To be used by the bidder for submission of the quotation]

- 
1. Item Name :
  2. Specifications  
(Conforming to Schedule of requirements  
Enclose additional sheets if necessary) :
  3. Currency and Unit Price :
  4. Quantity :
  5. Item Cost (Sl No. 3 \* Sl. No. 4 ) :
  6. Taxes and Other Charges :  
(i) Specify the type of taxes and duties  
in percentages and also in figures.  
(ii) Specify Other Charges in figures.
  7. **Warranty Period** :  
**(Conforming to the Schedule of requirements)**
  8. Delivery Schedule :  
(Conforming to the Schedule of requirements)
  9. Name and address of the Firm for  
placing purchase order :
  10. Name and address of Indian authorized  
agent ( in case of imports only) :

**Signature of the Bidder:** \_\_\_\_\_

**Name and Designation:** \_\_\_\_\_

**Business Address** : \_\_\_\_\_

\_\_\_\_\_

**Place:**

**Date:**

**Seal of the Bidder's Firm**

**SECTION 4**  
**CONTRACT FORM**

[ To be provided by the bidder in the business letter head]

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1. (Name of the Supplier's Firm) hereby abide by the delivery schedule mentioned in this document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in this document without any defect and deviations.
3. Warranty will be given for the period mentioned in this document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

**Signature of the Bidder:** \_\_\_\_\_

**Name** : \_\_\_\_\_

**Business Address** : \_\_\_\_\_

\_\_\_\_\_

**Place :**

**Date :**

**Seal of the Bidder's Firm**

**Department of Computer Science & Engineering**  
**NITK-Surathkal**

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**Specifications for HF SDR Kit**

An SDR HF radio kit featuring two interconnected transceivers and an SDR for signal processing and routing. This setup allows a single operator to remotely control both radio sets simultaneously, enhancing operational flexibility and efficiency. Technical Specifications of HF Transceivers are mentioned below.

Frequency Range: TX: 160, 80, 60, 40, 30, 20, 17, 15, 12, 10, 6 meter bands, RX: 0.13 ~ 30 MHz, 50 ~ 54 MHz (VFO: Continuous 30 kHz ~ 60 MHz) Mode: J3E (SSB), A1A (CW), A3E (AM), F3E (FM), F1B (FSK) Frequency Stability:  $\pm 5$  ppm ( $\pm 0.5$  ppm with SO-3),  $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$ , Antenna Impedance: 50  $\Omega$ , Antenna Tunable Range: 16.7 ~ 150  $\Omega$ , Power Supply: DC 13.8 V  $\pm 15\%$ .

Receiver Type: Double Conversion Superheterodyne or Triple Conversion Superheterodyne, Roofing Filters: 500 Hz / 2.7 kHz for superior dynamic range and adjacent signal rejection, IF Frequency: 11.374 MHz (first IF), 73.095 MHz (second IF), 10.695 MHz (third IF), 24 kHz (fourth IF/DSP), Sensitivity (Typical): , SSB/CW/FSK (S/N 10 dB): 0.5  $\mu\text{V}$  (0.13 ~ 0.522 MHz), 4  $\mu\text{V}$  (0.522 ~ 1.705 MHz), 0.2  $\mu\text{V}$  (1.705 ~ 24.5 MHz), 0.13  $\mu\text{V}$  (24.5 ~ 30 MHz), 0.13  $\mu\text{V}$  (50 ~ 54 MHz), AM (S/N 10 dB): 6.3  $\mu\text{V}$  (0.13 ~ 0.522 MHz), 31.6  $\mu\text{V}$  (0.522 ~ 1.705 MHz), 2  $\mu\text{V}$  (1.705 ~ 24.5 MHz), 1.3  $\mu\text{V}$  (24.5 ~ 30 MHz), 1.3  $\mu\text{V}$  (50 ~ 54 MHz), FM (12 dB SINAD): 0.22  $\mu\text{V}$  (28 ~ 30 MHz), 0.22  $\mu\text{V}$  (50 ~ 54 MHz), Squelch Sensitivity: SSB/CW/FSK/AM: Less than 5.6  $\mu\text{V}$ , FM: Less than 0.32  $\mu\text{V}$  (28 ~ 30 MHz), Less than 0.32  $\mu\text{V}$  (50 ~ 54 MHz), Selectivity: SSB/CW/FSK: More than 2.4 kHz (-6 dB), Less than 4.4 kHz (-60 dB), AM: More than 6 kHz (-6 dB), Less than 20 kHz (-50 dB), FM: More than 12 kHz (-6 dB), Less than 30 kHz (-50 dB), Image Rejection Ratio: More than 70 dB, IF Rejection Ratio: More than 70 dB, Noise Reduction: 32-bit floating point DSP for noise reduction and interference mitigation, Beat Cancel: DSP-based adaptive filter for reducing multiple beats, IF Notch: DSP-based manual notch and auto notch for eliminating interfering tones.

Output Power: SSB/CW/FM/FSK: Max 100 W, Min 5 W, AM: Max 25 W / Min 5 W, Modulation: SSB: Balanced modulation, FM: Reactance modulation, AM: Low-power modulation, Maximum Frequency Deviation (FM): Wide: Less than  $\pm 5$  kHz, Narrow: Less than  $\pm 2.5$  kHz, Spurious Response: HF: Less than -50 dB, 50 MHz: Less than -60 dB, Carrier Suppression: More than 50 dB, Unwanted Sideband Suppression: More than 50 dB, Transmit Frequency Response: -6 dB: 400 Hz ~ 2,600 Hz, Microphone Impedance: 600  $\Omega$ , XIT Variable Range:  $\pm 9.999$  kHz, Speech Processor: DSP-based compression for enhanced talk power.

Built-in automatic antenna tuner (6 ~ 160 meters), USB & Serial DB-9 ports for PC connectivity, Control Software: ARCP-590 for complete rig control from a PC, Radio Host Program: ARHP-590 for VOIP and remote operation over a network, CW Auto-Tune: Automatic adjustment of CW pitch to match received signal, Display: Large, multi-function LCD with selectable amber or green backlight, Voice Guide: Optional VGS-1 voice synthesizer for audible frequency announcement.

Quantity: 1 Kit

Warranty: One Year

Delivery time: 7 days

Delivery Location: SEARCH Site, NITK Surathkal

For any technical clarifications contact: Dr. Pruthviraj Umesh, Associate Professor, Department of Water Resources & Ocean Engineering, Professor Incharge: Transdisciplinary (R&D), National Institute of Technology Karnataka, Surathkal, Srinivasnagar - 575025, Mangalore, India, Mobile No:9972797225.

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