



राष्ट्रीय प्रौद्योगिकी संस्थान मेघालय
NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA
Bijni Complex, Laitumkhrah, Shillong-793003

Phone: 0364-2501215
Fax :0364-2501113
Web: <http://www.nitm.ac.in/>

Ref: NITMGH/ES/FIST-DST/EC/81/2021-22/2650

Date: 14.02.2022.

E-NOTICE INVITING QUOTATION (E-NIQ) FOR SUPPLY & INSTALLATION OF “RF ANECHOIC CHAMBER” AT THE CENTRAL INSTRUMENTATION FACILITY, NIT MEGHALAYA, SOHRA (CHERRAPUNJEE) CAMPUS

NIT Meghalaya invites online Tenders through **CPP Portal** <https://eprocure.gov.in/eprocure/app> from eligible Bidders for procurement of equipment.

Prescribed Tender document, detailed fees and specifications, bid instructions and Terms & Conditions can be downloaded from the CPP Portal (<https://eprocure.gov.in/eprocure/app>) or from the Institute website (<http://www.nitm.ac.in/>). However, the bidding process (submission and finalization) will be done in online mode at CPP Portal. The bidders may submit their bid only through uploading in the CPP Portal <https://eprocure.gov.in/eprocure/app>

BID INSTRUCTIONS:

01. The offer must be submitted in Two Bid – Two Files/Covers only through uploading in the CPP Portal, before the last date & time for bid submission. Bidders must submit their digitally signed bids. The covers will contain the following documents:
 - i. Cover 1 which consists of technical requirements and general terms & conditions.
 - ii. Cover 2 which consists of the Price Bid (in BoQ Ms-Excel format).

E-NOTICE INVITING QUOTATION (E-NIQ) FOR SUPPLY & INSTALLATION OF “RF ANECHOIC CHAMBER” AT THE CENTRAL INSTRUMENTATION FACILITY, NIT MEGHALAYA, SOHRA (CHERRAPUNJEE) CAMPUS.

Ref: NITMGH/ES/FIST-DST/EC/81/2021-22/2650

Date: 14.02.2022.

LAST DATE OF SUBMISSION: 07.03.2022 at 1:00 PM.

Technical bids will be opened on 08.03.2022 at 3:30 p.m.

After evaluation of technical bids, financial bids of the successful bidders (technically qualified) will be opened on a later date which will be duly notified.

02. **Submission of Compliance Certificate:** Duly filled and signed Compliance Certificates (as per formats at Annexure-IA & B) are must with the technical bid.
03. **Bid not transferable:** The bid documents are not transferable and the seal and signature of the authorized official of the firms must appear on all the papers and envelopes submitted.
04. The quantity mentioned for each item in the Annexure-III may increase/decrease depending on requirements.
05. GST Registration Certificate should be closed along with the tender documents.
06. Relevant catalogue of the items (if any) must be closed.
07. **Interested vendors may interact with Dr. Abhishek Sarkhel, Assistant Professor, Electronics and Communication Department, NIT Meghalaya @ 9485177039 email id: abhishek.sarkhel@nitm.ac.in or Dr. P. Rangababu, HOD EC, NIT Meghalaya for any queries @ 9485177063 and email ID p.rangababu@nitm.ac.in**
08. For e-way bill the successful vendor has to apply online via <https://ewaybill.nic.in/ewb.html>.

NIO TERMS & CONDITIONS:

01. **Rates:** Rates quoted in the Price Bid should be on DOOR DELIVERY at NIT MEGHALAYA, SOHRA (CHERRAPUNJEE) CAMPUS basis as per details below to be quoted in the BoQ:-

| Group: | Item Sl. No. | Item name |
|---------|--|-----------|
| Sl. No. | Particulars | Rate |
| I | Basic Price (per unit) | |
| | Discount if any | |
| | Total | |
| | GST (pl. breakup CGST/SGST/IGST) | |
| | Total (per unit) | |
| | Grand total for the item | |
| II | Transportation charges up to NIT Meghalaya, at the Central Instrumentation facility, Sohra (Cherrapunjee) campus basis (if applicable) | |
| III | Transit Insurance covering all risk up to 10 days after delivery (if applicable) | |
| | Grand total on door delivery at NIT Meghalaya, Central Instrumentation facility, Sohra (Cherrapunjee) campus basis (if applicable) | |

Note: Vague terms like “packing, forwarding, transportation etc. extra” without mentioning the specific amount will not be accepted. Such offers shall be treated as incomplete and rejected.

02. **Quotations have to be submitted in Indian Rupees (INR) only.** If goods are to be imported, the quotations shall include all charges for customs clearance, clearing agent fees, landing port handling charges, insurance etc. and onward transportation of the goods from the port/airport of landing for door delivery upto NIT Meghalaya, the Central Instrumentation facility, Sohra (Cherrapunjee) campus.
- NIT Meghalaya has a valid registration with the Department of Scientific and Industrial Research (DSIR), Ministry of Science & Technology, Government of India for availing Customs/Central Excise Duty exemption. NIT Meghalaya will provide all necessary certificates, authorizations and documents required for clearing the consignment and for onward transportation upto NIT Meghalaya, the Central Instrumentation facility, Sohra (Cherrapunjee) campus.
03. All documents submitted should be digitally signed by the bidder.
04. Bidder must unconditionally accept all terms and conditions stipulated in the tender document and all pages of the bid including all enclosures should be numbered and must be duly filled in and digitally signed by the bidder or his authorized representative.
05. The bidder must also upload a digitally signed copy of the **Tender Acceptance Letter** in the format given at Annexure-IV.
06. **Validity of Quotation: Quoted rates must be valid for 120 days from the date of quotation.**
07. **Warranty: The quoted equipment and components must be warranted for a minimum of two (02) years from the date of successful installation and training.**
08. **Literature must:** All the quotations must be supported by the printed technical data sheet/ literature and the specifications mentioned in the quotation must be reflected/ supported by such printed technical datasheet/ literature. **The model no. and specifications quoted should invariably be highlighted in the datasheets/literature for easy reference.**
09. **Details of supply of similar items to Institutes of National Importance/universities/organizations etc. (preferably those located in the Northeastern region) must be provided along with the technical bids.**

10. **Presentation:** Technically qualified bidders may be called upon to give full presentation of the quoted equipment at NIT Meghalaya campus before opening of Price bid as a support of their Technical Quotations and for any clarifications.
11. **Equipment breakdown:** Any Equipment breakdown must be attended to within **7 days** during the warranty period of the equipment free of cost.
12. **Training:** Free training is to be provided to NIT Meghalaya personnel on the operation, installation, training, maintenance and troubleshooting of the supplied items.
13. **After Sales Service:** Vendor should clearly state the available nearest after sales service facilities in the Northeastern/eastern region, without which the offer will be rejected.
14. **Dealership Certificate:** The bidder/tenderer should be either a manufacturer or authorized agent of the foreign/Indian manufacturer. Dealers or Agents quoting on behalf of Manufacturer must enclose valid dealership certificate.
15. **EMD:** - Earnest Money: Refundable earnest money deposit (EMD) of ₹ 60,000/- (Rupees Sixty Thousand) only through demand draft drawn (of any Nationalized/Scheduled Bank) in favour of National Institute of Technology Meghalaya, payable at Shillong, will have to accompany the technical Bid. The EMD of unsuccessful bidders shall be returned without any interest after award of contract. EMD of the successful bidder will be released without interest on submission of the Performance Bank Guarantee or delivery of the ordered items, as applicable.

Firms registered under MSME will be exempted from submitting EMD. In case of firms registered under NSIC, exemption will be given to the permissible extent, as indicated in their Certificate. All vendors claiming exemption must submit copies of their valid MSME/NSIC registration Certificate (along with the Technical Bid in case of two bid system). Offers received without Earnest Money or valid Certificate shall be summarily rejected.

16. **Performance Bank Guarantee (PBG):** The successful bidder shall furnish an unconditional PBG (asper format at Annexure II) for 3% of the Purchase Order value from a Nationalized/Scheduled Bank of India, before release of the payment. Else 3% of the billed amount will be deducted as security deposit. Where the PBG is obtained by a foreign bank, it shall be endorsed by a Nationalized/Scheduled Indian bank and shall be governed by Indian Laws and be subject to the jurisdiction of courts at Shillong. The PBG shall guarantee that,

- The Vendor guarantees satisfactory operation of the Equipment & components against poor workmanship, bad quality of materials used, faulty designs and poor performance.
- The Vendor shall, at his own cost, rectify the defects/replace the items supplied, for defects identified during the period of guarantee/warranty.

The PBG shall remain valid for period of sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.

17. **The vendor should have Income Tax account (PAN), GST Registration Certificate.**
18. **The item(s) will be used only for research purpose of the Institute and not for any commercial use. Hence, vendors may quote concessional rate of IGST @ 5%. Relevant documents shall be provided by the Institute.**
19. **Training should be provided by the bidder till the satisfaction of the users on free of cost.**
20. **The bidder should mention about the utilities required for the setup.**
21. **The RF anechoic chamber must be installed within the space provided by the NIT Meghalaya.**
22. **Delivery:**
 - a. Time Limit: *Maximum within 12 (Twelve) weeks from the date of issue of purchase order.*
 - b. Safe Delivery: **All aspects of safe delivery shall be the exclusive responsibility of the vendor.** At the destination site, the package will be opened only in the presence of NIT user/representative and vendor's representative. The intact condition of the package and the seal/indicators for not being tampered with, shall form the basis for certifying the receipt in good condition.
 - c. Insurance: The supplier is to establish 'All Risk Transit Insurance' coverage till door delivery at

The Central Instrumentation Facility, NIT Meghalaya, Sohra (Cherrapunjee) Campus.

- d. Part Delivery: As far as possible no part delivery shall be entertained. However, in extreme cases, acceptance of part delivery shall be a prerogative of the Institute.
 - e. Penalty for delay in delivery: The date of delivery should be strictly adhered to otherwise, the Director, NIT Meghalaya reserves the right not to accept delivery in part or full. The Director, NIT Meghalaya also reserves the right to impose penalty, as deemed fit, for delay in delivery of the equipment, including imposition of Liquidated Damages (LD). The decision of the Director shall be final and binding to all.
23. **Genuine Pricing:** Vendor is to ensure that quoted price for the particular item is not more than the price quoted to any other customer in India, particularly to IITs/NITs and other Government Organization. Copy of the latest price list for the quoted item, applicable in India, must be enclosed with the offer.
 24. **Conditional tenders not acceptable:** All the terms and conditions mentioned herein must be strictly adhered to by all the vendors. Conditional tenders shall not be accepted on any ground and shall be rejected straightway. Conditions mentioned in the tender bids submitted by vendors will not be binding on NIT Meghalaya.
 25. **Late and delayed tender:** Late and delayed tender will not be considered.
 26. **Payment: 100% payment within 30 days from of successful installation commissioning and acceptance.**
 27. Payment will be made through PFMS. Bidders are required to furnish complete and correct bank details on their letterhead along with the technical bid. A scanned copy of a cancelled cheque may also be attached for verification of IFSC code.
 28. **Enquiry during the course of evaluation not allowed:** After opening the Technical Bid, no enquiry from the bidder(s) shall be entertained during the course of evaluation of the tender till final decision is conveyed to the successful bidder(s). However, the Purchase Committee or its authorized representative may make enquiries/seek clarification from the bidders. In such a case, the bidder must extend full co-operation. The bidders may also be asked to arrange demonstration of the offered items, in a short period of notice.
 29. At any time prior to the date of submission of bid, NIT Meghalaya may, for any reason, either of its own or in response to a clarification from a prospective bidder, modify the bidding documents by an amendment / corrigendum. **Any such amendment / corrigendum will be duly notified through the Institute's website only and CPP Portal.** Prospective bidders are advised to check the Institute's website every now and then for any amendment / corrigendum. In order to provide reasonable time to take the amendment into account in preparing the bid, NIT Meghalaya shall extend the date and time for submission of bids.
 30. The acceptance of the quotation will rest solely with the Director, NIT Meghalaya, who in the interest of the Institute is not bound to accept the lowest quotation and reserves the right to himself to reject or partially accept any or all the quotations received without assigning any reasons.
 31. **Force Majeure:**

If the performance of the obligation of either party is rendered commercially impossible by any of the events hereafter mentioned that party shall be under no obligation to perform the agreement under order after giving notice of 15 days from the date of such an event in writing to the other party, and the events referred to are as follows:

 - (a) Any law, statute or ordinance, order action or regulations of the Government of India,
 - (b) Any kind of natural disaster, and
 - (c) Strikes, acts of the Public enemy, war, insurrections, riots, lockouts, sabotage.
 32. **Termination for default:** Default is said to have occurred
 - (a) If the equipment or any of its component is found having poor workmanship, faulty designs, poor performance and bad quality of materials used.

- (b) If the supplier fails to deliver any or all the services within the time period(s) specified in the purchase order or any extension thereof granted by NIT Meghalaya.
- (c) If the supplier fails to perform any other obligation(s) under the contract.

Under the above circumstances NIT Meghalaya may terminate the contract / purchase order in whole or in part and forfeit the EMD/PBG as applicable. In addition to above, NIT Meghalaya may at its discretion also take the following actions: NIT Meghalaya may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate NIT Meghalaya for any extra expenditure involved towards goods and services obtained.

33. Applicable Law:

- a. The contract shall be governed by the laws and procedures established by Govt. of India and subject to exclusive jurisdiction of Competent Court and Forum in Shillong /India only.
- b. Any dispute arising out of this purchase shall be referred to the Director, NIT Meghalaya, and if either of the parties here to is dissatisfied with the decision, the dispute shall be referred to the decision of an Arbitrator, who should be acceptable to both the parties, to be appointed by the Director of the Institute. The decision of such Arbitrator shall be final and binding on both the parties.

Sd/-
Registrar

Encl.: ANNEXURE-I, ANNEXURE-II, ANNEXURE-III, ANNEXURE-IV.

ANNEXURE-I

**A. COMPLIANCE CERTIFICATE FOR NIQ TERMS
AND CONDITIONS (To be enclosed in the
technical bid)**

| Sl. No. | NIQ Terms and Conditions | Yes/No |
|----------------|---|---------------|
| 01 | Rate quoted as per instruction | |
| 02 | AMC rate after warranty provided | |
| 03 | Validity of quoted rate for 180 days agreed | |
| 04 | EMD submitted / appropriate certificate enclosed | |
| 05 | PBG term agreed | |
| 06 | Payment term agreed | |
| 07 | Delivery terms agreed | |
| 08 | Warranty period agreed | |
| 09 | Literature: Printed provided | |
| 10 | Dealership/distributorship certificate (in case of dealers/agents) provided | |
| 11 | Details of supply to other Institutes of National Importance provided | |
| 12 | Equipment breaks down clause agreed | |
| 13 | After Sales Service: address of nearest after Sales Service Centre in the Northeastern/Eastern region provided | |
| 14 | Manufacturer certificate provided | |
| 15 | Applicable law terms agreed | |
| 16 | All other terms and conditions mentioned in the NIQ (Technical & Financial) agreed | |

Signature with Seal:.....

Vendor: M/s.....

Annexure-I

**B. COMPLIANCE CERTIFICATE FOR SPECIFICATIONS
(One for each item, must be closed in the Technical bid)**

| | | | |
|---|----------------------|------------------------------------|--------------------------------|
| Item Sl. No. | | Item Name: | |
| Quoted Product: | Make: | Model No: | |
| Specifications as per Annexure-III | | Quoted Item Specifications* | Complied/ Deviation |
| Parameter | Specification | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Signature with Seal:.....
Vendor: M/S.....

*** Vendor must quote the parameter specification of the quoted product in this column and not just copy the specification from the tender call document. Failure to do so will lead to rejection of the tender.**

ANNEXURE-II

PERFORMANCE BANK GUARANTEE

To:
The Director,
National Institute of Technology Meghalaya
Bijni Complex, Laitumkhrah, Shillong-793
003Meghalaya

WHEREAS(Name of Supplier)
Herein after called "the Supplier" has undertaken, in pursuance of Contract No.....dated,.....20....to
supply..... (Description of Goods and Services) herein after called
"theorder".

AND WHEREAS it has been stipulated by you in the said order that the Supplier shall furnish you with a
Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the
Supplier's performance obligations in accordance with the order.

ANDWHEREAS we have agreed to give the Supplier a Guarantee:
THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier,
up to a total of (Amount of the Guarantee in Words and
Figures) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default
under the order and without cavil or argument, any sum or sums within the limit of.....
(Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your
demand or the sum specified therein.

This guarantee is valid until the.....day of.....20.....

Signature and Seal of Guarantors

.....

.....

.....

Date.....20....

Address:.....

.....

.....

All correspondence with reference to this guarantee shall be made at the following

Address: The Director,
National Institute of Technology Meghalaya
Bijni Complex, Laitumkhrah, Shillong-793 003, Meghalaya

ANNEXURE-III

DETAILED TECHNICAL SPECIFICATIONS

Technical Specifications for RF Anechoic Chamber

| SL No. | Specification of RF Anechoic Chamber (One Complete Setup of RF Anechoic Chamber and its necessary accessories as provided below) |
|----------|--|
| 1 | Scope of Work |
| 1.1 | Supply, installation, testing and training of RF anechoic chamber with antenna setup. |
| 2 | Technical Specifications of Anechoic Chamber (Anechoic Chamber with Accessories): |
| 2.1 | Chamber (Outer Size): 7 m x 3.5 m x 3 m (LWH). |
| 2.2 | Maximum DUT size: 25 cm. |
| 2.3 | Frequency Range: 0.8 GHz to 18 GHz (Provision for upgrading up to 40 GHz). |
| 2.4 | Construction: Self-Supported PAN panel structure made out of GI Sheet & pipes. |
| 2.5 | Outer finish: Outer finish must be laminated board of 8-10 mm thick. |
| 2.6 | Door: A shielded door of 0.9 m x 2.10 m (WH) (Approximate) size for entry in the room. Beryllium copper finger stocks should be provided on frame to avoid leakages. |
| 2.7 | RF Absorbers complying with quiet zone for the entire frequency range must be installed. Walk-on absorbers on the floor area also be included. Measured and simulated results of quiet zone must be shared (1-40 GHz). Reflection should be less than 1% from absorbers with high absorption feature (technical details must be shared). |
| 2.8 | LED EMI free lights has to be installed with suitable wiring inside the chamber. |
| 2.9 | Suitable RF adapter covering 40 GHz range (N type female to SMA Type Male and N type Female to SMA Female), Loss must be less than 1 dB per adapter. Precision adapter will be preferred. "Supplier may quote precision alternative adapters separately as optional". |
| 2.10 | Two split AC (must be sufficient for mentioned chamber dimension) has to be provided inside the chamber to maintain temperature & ventilation inside chamber. Pipes & Cables will be taken out through Pipe penetration. It is to maintain temperature and humidity (as per absorber compatibility) inside the chamber. |
| 2.11 | EMI Power line filter will be provided with 32A, 230 VAC, Single phase configuration and all electrical connections inside the chamber should operate through this filter. |
| 2.12 | One camera set for monitoring activities inside the chamber also be provided which includes cameras, DVR & Display. |
| 2.13 | Earthing: Anechoic chamber should be suitably earthed. Earthing less than 2 ohm. Earthing connection at 2 points with chamber. |
| 2.14 | Absorbers should have fire and humidity resistant coating. |
| 3 | Sample Holder for RCS / Metamaterial Measurement |
| 3.1 | Anechoic wall with mounting panel for Metamaterial/Metasurface/FSS measurement within frequency span of 1-40 GHz. |
| 3.2 | Manual height adjust stand will be provided to hold material. |
| 3.3 | It must be portable to align w.r.t Tx & Rx positioner system. |
| 3.4 | Weight capacity should be more than 10 kg. |
| 4 | Rotary Tx & Rx Positioner System: |
| 4.1 | Supply, Installation & Testing of Antenna Positioner system set. |
| 4.2 | VNA interfacing for fetching data from VNA with movement of positioner. |
| 4.3 | 3 Axis positioning system Control with PC. |

| | |
|-----------|--|
| 4.4 | Both positioner & VNA will operate through software. |
| 5 | Transmitter & Receiver Positioner System |
| 5.1 | Positioner system should be made out of toughened PVC material. |
| 6 | Transmitter: |
| 6.1 | Transmitter – Automatic. |
| 6.2 | 1 Axis Tx automatic positioner systems. |
| 6.3 | The System has the ability to adjust the antenna position in Polarization, Azimuthal & elevation directions. Azimuthal from 0 to 360 degree; Elevation & Polarization from -90 to +90 degree. |
| 6.4 | Mechanical alignment. |
| 6.5 | Height same as Receiver centre. Centrally located. Manual Height adjustable. |
| 6.6 | Minimum weight capacity of Tx Positioner should be 2 to 3 kg and maximum weight capacity 10 Kg. |
| 7 | Receiver: |
| 7.1 | 3 Axis Positioner System (X-Axis, Y-Axis, Azimuth, Elevation & Polarization Movement). |
| 7.2 | The System has the ability to adjust the antenna position in Polarization, Azimuthal & elevation directions. Azimuthal from 0 to 360 degree; Elevation from 0 to 360 degree; Polarization from vertical to horizontal. X & Y Axis movement from -400 to +400 mm. |
| 7.3 | Receiver positioner systems should have rail slider assembly to change distance between Tx & Rx. The system will move from 0 to 800 mm (+/- 400 mm) with help of knobs. |
| 7.4 | Receiver Positioner system shall be able to move in Azimuth (0 to 360), Elevation (-90 to +90) & Polarization (-90 to +90). Also, X – Axis and Y – Axis movement from + 350 mm. |
| 7.5 | Angular Motion can be done in different step sizes and it is user selectable. |
| 7.6 | Wide range of step sizes like from 0.18 degree to 0.9, 1.8,9,18.....any angle in multiple of 0.18 deg. |
| 7.7 | Elevation Movement will be +90 degree. |
| 7.8 | Polarization Movement Vertical & Horizontal. |
| 7.9 | Minimum weight capacity of Rx Positioner should be 2 to 3 kg and maximum weight capacity 10 Kg. |
| 8 | Positioner Controller: |
| 8.1 | Controller of Positioner should be kept outside the chamber. |
| 8.2 | Positioner should be provided with provision to access its home position automatically. |
| 8.3 | Interfacing with VNA for automatic measurement. |
| 8.4 | Required Minimum step angle movement of 0.18 degree of automatic receiver positioner system. In addition, options to select angular resolution of a) 10 ⁰ b) 15 ⁰ c) 30 ⁰ d) 90 ⁰ should be present. |
| 8.5 | Automatic 1- Axis transmitter positioner system with polarization movement from 0 to 360 degree. Automated rotational movement in one axis for measurement of axial ratio. Provision for mounting of reference antennas. Manual knob also be provided to move the mounting plate. |
| 8.6 | Positioner is provided with mounting brackets for antennas mounting. |
| 8.7 | The Hardware operation panel of positioner system will be kept outside the chamber. |
| 8.8 | The power (5A, 230 VAC, 2 lines) to Panel will be taken from inside the Chamber. |
| 8.9 | Software should be provided for operation of positioner. |
| 9 | Measurement Capabilities |
| 9.1 | The overall system should be capable of measuring Antenna parameters: - Gain • Directivity • Beam-width • Cross polar discrimination • Sidelobe levels • 3D radiation pattern • Radiation pattern in any polarization (linear or circular) • Axial Ratio Pattern • Antenna efficiency • Measuring the S-Parameters (S ₁₁ ,S ₁₂ ,S ₂₁ and S ₂₂). |
| 9.2 | Graph plotting & data saving after each test. |
| 10 | Report & Data Analysis: |

| | |
|-----------|--|
| 10.1 | The data will be saved in excel format in the PC. |
| 10.2 | The Plots can also be saved in desired format. |
| 10.3 | User can retrieve the past data on the software for analysis. |
| 11 | Interfacing Software: |
| 11.1 | Single software window to operate VNA & Positioner. |
| 11.2 | Minimum step angle should be 0.18 degree. In addition, options to select angular resolution of a) 10 ⁰ b) 15 ⁰ c) 30 ⁰ d) 90 ⁰ should be present. |
| 11.3 | Graph plotting & reading save options should be provided. |
| 11.4 | Connectivity of positioner hardware & Instrument to PC through USB, LAN, GPIB interfacing options. |
| 11.5 | Customized software that can be interfaced with any model of any Manufacturer / Make. |
| 11.6 | Measuring the Gain, Directivity, Beam width, 2-D, 3- D radiation pattern, S-Parameters (S ₁₁ ,S ₁₂ ,S ₂₁ and S ₂₂). |
| 11.7 | Real time monitoring of readings during measurements. |
| 11.8 | Graph plotting & data saving after each test. |
| 11.9 | Both graph and readings within single window. |
| 11.10 | Complete sweep data with respect to given data points. |
| 11.11 | Five or more graph plotting in single run of any 2D, 3D measurement. |
| 12 | Broadband Horn Antenna: |
| 12.1 | Broadband Horn Antenna – 800 MHz to 18 GHz – 02 No's. |
| 12.2 | Test report for antenna must be provided. |
| 12.3 | Input Power: up to 100 Watts CW/200 Watts for pulsed applications. |
| 12.4 | Polarization decoupling: > 25 dB to > 30 dB (typ.). |
| 12.5 | Input impedance: 50 Ω. |
| 12.6 | VSWR: ≤ 3.0 (Up to 1.5 GHz), < 2.0 (after 1.5 GHz). |
| 12.7 | Gain: 3.5 dBi to 22 dBi (typ.). |
| 12.8 | Connector: N/SMA as per setup. |
| 12.9 | Mounting Plate: Mounting plate with screws to be provided. |
| 13 | RF Cables |
| 13.1 | RF Cables – For connecting Tx & Rx with VNA (Model No N5221A PNA Network Analyzer). |
| 13.2 | A total 4 cables of Length 7 m, 4 m, 1.5 m, 1.5 m must be provided. Cables frequency of operation must be between 800MHz to 26 GHz or higher range. Lower loss cable will be preferable. Hence, specification and technical data sheet must be provided. Supplier may quote different precision cable (flexible/semi rigid) with alternative options. Institute will have right to select as per budget. |
| 13.3 | Connector both ends – 2.92 mm (Male) preferable. |
| 14 | Testing & Handover: |
| 14.1 | Quiet zone to be provided 1 m x 1 m x 1 m throughout the Band. Measured and simulated results should be shared. |
| 14.2 | Quiet Zone level will be -25 to -40 dB throughout the frequency band. |
| 14.3 | Level of shielding effectiveness will be -50 to -60 dB throughout the band and testing of shielding effectiveness as per IEEE 299. |
| 14.4 | Reflectivity of the used absorber should be adequate for the above-mentioned quiet zone. |
| 14.5 | Amplitude and phase imbalance within the measurement zone will be ± 1 dB and ± 1 ⁰ respectively (preferable). Amplitude and phase ripple over the quiet zone should be ± 0.5 dB and ± 1 ⁰ respectively (preferable). |
| 15 | Vendor qualification criteria: |
| 15.1 | Vendor should arrange live demo of complete system in already installed project site. |
| 15.2 | Vendor should give detailed PPT and related technical documents of the complete |

| | |
|-----------|--|
| | set up. |
| 15.3 | Operational manual for each and every component must be provided. |
| 15.4 | Vendor should provide warranty of minimum 2 years. The vendor may need to demonstrate the proper functioning of the chamber and associated hardware and software just before the warranty period gets expired (after 1.5 Years). |
| 15.5 | Must have support centre at any of nearest East - Northeast states (Preferable). |
| 15.6 | The whole measurement set up of anechoic chamber must be compatible with our present network analyser with model no N5221A PNA Network Analyzer. |
| 16 | Testing & Handover: |
| 16.1 | Post-processing software should be capable of providing the data plots polar style. |
| 16.2 | Data format of the measured results from the chamber can be of .csv/.xls. |
| 16.3 | Complete control and automation software has to be provided along with the operation manual. |
| 17 | General: |
| 17.1 | Vendor must provide and install/configure suitable software for post processing of measured data with good graphical features/attributes. |
| 17.2 | Vendor should have experience in supplying similar kind of anechoic chamber, positioners and related hardware and software. |
| 17.3 | 3 days of on-site extensive training must be given after the chamber installation and validation. |
| 17.4 | The proposed work "Anechoic Chamber" should be executed and made 100% functionally ready by 8-12 weeks after the date of purchase order getting released. |

.....
.....

ANNEXURE-IV

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Ref. No.

Date:

To,

The Registrar
National Institute of Technology Meghalaya
Bijni Complex, Laitumkhrah
Shillong 793003, Meghalaya

Sub: Acceptance of Terms & Conditions of Tender.
Tender Reference No.: NITMGH/..... dated2021

Name of Tender:-

Sir,

1. I / We have downloaded / obtained the tender document(s) for the above-mentioned Tender from the website of NIT Meghalaya, Shillong as per your advertisement, given in the CPP Portal and the above mentioned website.
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No.....to (including all annexure(s), schedule(s),etc.),which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s), if any, issued from time to time by NIT Meghalaya, Shillong, 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 its totality/ entirety.
5. I/WedoherebydeclarethatourFirmhasnotbeenblacklisted/debarredbyanyGovt.Department/Publicsectorundertaking.
6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then NIT Meghalaya, Shillong shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)
