

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
ISRO TELEMETRY TRACKING & COMMAND NETWORK (ISTRAC)  
BANGALORE**

**Tender for Cryo-MMIC RF Front-end Development & Realization**

**Bids to be submitted online**

**Tender No.: ISTRAC/ISTRAC PURCHASE/TR202400008801 dated 31-05-2024**

## A. Tender Details

Tender No :	<b>ISTRAC/ISTRAC PURCHASE/TR202400008801</b>
Tender Date :	<b>31-05-2024</b>
Tender Classification:	<b>GOODS</b>
Purchase Entity :	<b>ISTRAC PURCHASE</b>
Centre :	<b>ISRO TELEMETRY TRACKING &amp; COMMAND NETWORK (ISTRAC)</b>

### Cryo-MMIC RF Front-end Development & Realization

This is a dual part Public Tender. Please submit your offer separately for Technical and price Bid under relevant template. Please upload Price Bid under Price Bid only and nowhere else. If price is mentioned anywhere other than Price Bid, your offer will not be considered. 2)Please provide your compliance for (a) Performance Bank Guarantee clause (b) Liquidated Damages clause and Security Deposit clause and other terms and conditions of the tender enquiry.

#### A.1 Tender Schedule

Bid Submission Start Date :	<b>31-05-2024 10:00</b>
Bid Clarification Due Date :	<b>18-06-2024 16:00</b>
Bid Submission Due Date :	<b>04-07-2024 14:00</b>
Bid Opening Date :	<b>04-07-2024 14:30</b>
Price Bid Opening Date :	<b>11-07-2024 16:00</b>

## **B. Tender Attachments**

### **Technical Write-up/Drawings**

**Document : PRODUCTION COST TABLE (Price Bid Related)**

**Document : RFP Document for Vendors**

### **Instructions To Vendors**

#### **3. INSTRUCTIONS TO TENDERERS FOR ONLINE SUBMISSION OF TENDERS THROUGH E-PROCUREMENT SYSTEM**

1. a) Bidders shall arrange themselves all resources, including Digital signature certificates and Internet Connections at their own cost, for participating in online tendering.  
b) Vendors can download the tender details and submit their offers online using their vendor accounts (obtained during registration) in our portal. Help demos for tender download and bidding processes are given on home page.  
c) The tender should be submitted online in the ISTRAC link before the due date and time as specified in the tender schedule in the portal.  
d) Vendors shall also take note of other Instructions to tenderers indicated in the tender documents.
2. Conditions for online submission of tenders:
  - a) It is mandatory for interested parties to register as vendors in our e-procurement portal <https://eproc.vssc.gov.in/home.html> for participating in online eProcurement process of ISRO. Only registered vendors can submit their offers online in our eProcurement portal.
  - b) Vendors who are already registered in the existing EGPS software of ISRO, please register by clicking the link in the email you would have already received from 'eproc@vssc.gov.in'. After registration, do the profile update by login to this portal.
  - c) For new vendors, who are not registered in the existing EGPS software, vendor registration will be released along with the portal release. To register as vendors please refer to the help demos listed on the home page of the e-procurement link mentioned above. They may approach help desk (contact details provided on the home page) for any technical help for registration and subsequent process.
  - d) OEM details should be added in your E-Procurement profile under Add Agent/Principal without fail.
3. ISTRAC shall not be responsible for failure of vendors in submitting bids online caused due to technical reasons at vendor end such as network or power failures, computer failure, internet-browser, mistakes / errors in filling the bids on line by vendor etc.
4. Procedure for seeking clarifications/help for the tender:

a) All enquiries regarding the tenders and submission of offers shall be online and only through our eProcurement portal.

b) Vendors may approach help desk e-mail id and phone number given on the home page for any technical help (e-mail: eproc@vssc.gov.in and Phone: +91471 2565454/4574/2527/3753/3289).

5. Queries by vendors on technical problems on the last day of tender will not be binding on ISTRAC/ISRO for resolving/addressing. ISTRAC will not be responsible for non-submission of bids for those cases.

#### **4. CERTIFICATE OF UNDERTAKING**

1. A certificate from the bidder shall be enclosed along with their quotation (Technical bid) as per the format enclosed.

2. An AGENT is a person employed to do any act for another, or to represent another in dealings with third person.

3. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. (Competent authority is : DEPARTMENT FOR PROMOTION OF INDUSTRY AND INTERNAL TRADE (DPIIT).

4. (b)Control shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.

5. Bidder from a country which shares a land border with India for the purpose means:

(a)An entity incorporated, established or registered in such a country; or

(b)A subsidiary of an entity incorporated, established or registered in such a country; or

(c)An entity substantially controlled through entities incorporated, established or registered in a such a country; or

(d)An entity whose beneficial owner is situated in such a country; or

(e)An Indian (or other) agent of such an entity; or

(f)A natural person who is a citizen of such a country; or

(g)A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

6. BIDDER (including the term tenderer, consultant or service provider in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by

such person, participating in a procurement process.

## 7. CERTIFICATE

8.

COMPANY NAME AND SEAL:

9. DESIGNATION:

10. Explanation:

(a) Controlling Ownership interest means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company;

11. GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

ISTRAC, BENGALURU: 560 058.

12. iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals.

13. (iii). I/We \_\_\_\_\_ hereby undertake that if the Certificate is found to be false at any given time ISRO/ISTRAC may treat this as a ground for immediate termination and further legal action in accordance with law can be initiated.

14. ii) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.

15. (ii). I/We hereby confirm that the country of origin of goods is \_\_\_\_\_

16. i) In case of a company or Limited Liability Partnership, the beneficial owner is a natural person(s),

who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

17. (i).I/WE\_\_\_\_\_read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India. I / We\_\_\_\_\_Certify that this bidder is not from such a country.

18. iv)Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official.

19. I / We\_\_\_\_\_Certify that this bidder is from such a country and registered with the Competent Authority (i.e. Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). Copy of Registration Certificate is enclosed.

20. NAME:

21. OR\*

I/We \_\_\_\_\_ read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India.

22. Ref:Tender No\_\_\_\_\_ date\_\_\_\_\_

Our Quotation No.\_\_\_\_\_ date\_\_\_\_\_

23. REQUIREMENT OF REGISTRATION:

24. SIGNATURE:

25. ( \* Strike out whichever is not applicable).

26. Subject: Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs) 2017 - reg.

27. The beneficial owner for the purpose of (6) above will be as under:

28. (TO BE PRINTED ON THE LETTER HEAD OF THE VENDOR)

29. v)In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or

ownership.

## **5. PROFORMA FOR INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.

(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of nonacceptance of tender, the tenderer will have to remove the samples at his own expense.

(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.

(d) Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

2. ACCEPTANCE OF STORES: (a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost. (b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final. (c) If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor. (d) If the whole or any part of the stores supplied are rejected in accordance with Clause No. (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

3. ARBITRATION : All disputes, differences, claims and demands arising under or pursuant to or touching this agreement shall be referred to Arbitration of a sole Arbitrator to be appointed by the Director, ISTRAC, whose decision/award will be final and binding on both the parties. Such arbitration shall be held in Bangalore and shall be subject to and governed by the provisions of the Arbitration and Conciliation Act of 1996 or any statutory modification or re-enactment thereof. The language to be used in Arbitration is English only.

4. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from

the Purchase Officer concerned to avoid any payment of such levies.

5. a) Your offer should be valid for 120 days from the date of opening of the tender. b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

6. CUSTOMS DUTY : This office is eligible for Concessional Customs Duty @ 5.5% against Ministry of Finance, Department of Revenue, Government of India, vide Customs Notification No.51/96-Cus Dated 23-07-1996 (SI.No.1) and amended under Notification No.93/96 dated 11th December 1996 and 24/2002 dated 01-03-2002

7. DESPATCH: The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

8. TAXES: GST is payable as per applicable rates.

9. GUARANTEE & REPLACEMENT: (a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance. (b) Warranty shall be for the period mentioned in the tender document. After the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within the warranty period, by the purchaser who shall state in writing in what respect the stores or any part thereof are faulty. (c) If, in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser, provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of warranty from the date of acceptance thereof. (d) Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores. (e) The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the Stores supplied by the Contractor are defective or any defect has developed within the said period of warranty or any other period or as to whether the nature of defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor. (f) To fulfill guarantee conditions outlined in (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser)



10. If the IGST is applicable, the same will be reimbursed if it is reflected in Bill Of Entry. Proof shall be provided while claiming payment.

11. It is to be noted that either Customs Duty or GST is applicable ( any one)

12. JURISDICTION : The contract/ purchase order shall be governed by an interpreted and construed in accordance with the laws of India. The courts situated at Bangalore only shall have jurisdiction to deal with and decide any legal matter or dispute arising out of contract/ purchase order.

13. PACKING FORWARDING & INSURANCE: The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

14. Please provide your compliance for Security Deposit, Performance Bank Guarantee and Liquidated Damages Clause.

15. PRICES: Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

16. REJECTED STORES: Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

17. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be mentioned in the price bid template. If nothing is mentioned, then it will be presumed that the rate quoted is inclusive of all taxes/duties.

18. SECURITY DEPOSIT: Wherever, the Purchase Order value is Rs. 5.00 Lakhs or more, on acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, 'Security' and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores

Contracted at the risk of the Contractor in terms of Sub-Clause (ii) and (iii) of clause regarding Delivery. (b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

19. SETTLEMENT OF DISPUTES : Except as otherwise specifically provided in the contract, all disputes concerning question of fact arising under the Contract shall be decided by the Purchaser subject to a written appeal by the Contractor to the Purchaser whose decision shall be final to the parties hereto. Any disputes or differences including those considered as such by only one of the parties arising out of or in connection with the Contract shall be, to the extent possible, settled amicably between the parties. If amicable settlement cannot be reached, then all disputes shall be settled by arbitration.

## 20. TERMS & CONDITIONS OF TENDER

21. TEST CERTIFICATE: Wherever required, test certificates should be sent along with the despatch documents.

22. The authority of the person signing the tender, if called for, should be produced.

23. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.

24. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

25. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.

26. The term Contractor shall mean, the person, firm or company with whom or with which the order for the supply of Stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.

27. The term Purchase Order shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

28. The term Purchaser shall mean the President of India or his successors or assigns.

29. The term "Stores" shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.

## **6. MAKE IN INDIA UNDERTAKING (VENDORS SHALL SUBMIT THE BELOW CERTIFICATE ON THEIR LETTER HEAD DULY SIGNED)**

1. The type of Class which the vendor belongs: Class-I or Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision.( Class I local supplier means a supplier or service provider, whose goods, service or works offered for procurement, has local content equal to or more than 50% & Class II local supplier means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%). NOTE: Bidders offering imported products will fall under the category of Non-local suppliers. They cannot claim themselves as Class I Local suppliers/Class II Local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc. as local value addition.

2. Percentage of local content for the quoted item.

3. Details of location (s) at which the local value addition is made

4. Provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be.

## **7. TENDER TERMS AND CONDITIONS**

1. All information in Vendor Specified Terms shall be provided without fail to avoid unnecessary correspondence / delay in process. The same should reach before technical bid opening date and time without fail.

2. a) Order no: F.No.6/18/2019 PPD dated 23.07.2020 of Department of Expenditure), Ministry of Finance

Under Public procurement division for the General Financial rule (GFRs).

3. As per Rule 144(xi) of General Financial Rules, 2017, any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority (i.e., Department for Promotion of Industry and Internal Trade) in line with Order (Public Procurement No. 1, 2 and 3) dated 23/07/2020 and 24/07/2020 or any amendments thereon issued by the Public Procurement Division, Department of Expenditure, Ministry of Finance. Hence, Vendors or Agents of a Vendor (Indian or Others) from a

country sharing border with India shall submit the copy of Valid Registration made with DPIIT along with the tender mandatorily, without which the offer will be treated as invalid.

4. A supplier who has been debarred by any procuring entity for violation of this order shall not be eligible

for preference under this order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed.

5. b) Class I local supplier means a supplier or service provider, whose goods, service or works offered for procurement, has local content equal to or more than 50%, as defined under order.

6. c) Class II local supplier means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this Order.

7. d) Bidders offering imported products will fall under the category of Non-local suppliers. They cannot claim themselves as Class I Local suppliers/Class II Local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc. as local value addition.

8. Delivery Terms: FOR ISTRAC

9. e) Verification of local content:

i) The Class I local supplier/ Class II local supplier at the time to tender, bidding or solicitation shall be required to indicate percentage of local content and provide self certification that the item offered meets the local content requirement for Class I local supplier / Class II local supplier as the case may be. They shall also give details of the location(s) at which the local value addition is made.

10. GENERAL TERMS & CONDITIONS FOR BIDDERS: For this procurement, bids from Class I & class II Local Suppliers are admissible. hence provisions contained in Public Procurement (Preference to Make in India), Order 2017 issued by Department for Promotion of Industry and Internal Trade (DIPP), Ministry of Commerce & Industries vide letter No. P 45021/2/2017 PP(BE II) dated 04.06.2020 and subsequent amendment & directives shall be followed. Accordingly, offer will be evaluated & processed in conformation with above referred GOI order (Specially mentioned below). The bidder shall provide compliance and undertaking as per order and hereafter amendments:

11. If an agent submit bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in this tender for the same item. If submitted, all offers will be liable for

rejection.

12. iii) False declarations will be in breach of the code of Integrity under Rule 175(1)(i)(h) of the General

Financial Rules (GFR) for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the general Financial Rules along with such other actions as may be permissible under Law.

13. ii) In case bid value is in excess of Rs. 10 Cr., Class I local supplier/ Class II local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

14. In case the bidders propose any other payment terms in deviation with the standard terms mentioned in the tender enquiry, it may be noted that applicable cash flow implications will be loaded on the prices quoted for commercial comparison of the offers. If advance payments are insisted by the bidders, interest at the rate of MCLR (Marginal Cost Linked Rate) as notified by State Bank of India from time to time shall be loaded on the prices for price comparison.

15. In this tender either the Indian agent on behalf of the principal/OEM or the principal /OEM itself can bid, but both cannot bid simultaneously for the same item. Indian agents while quoting on behalf of their principals shall provide necessary latest authorisation letter obtained from their principals/manufacturers.

16. Liquidated damages: If the vendor fails to deliver the items on or before the delivery date, or any extension thereafter purchaser shall recover from the vendor as liquidated damages a sum of 0.5% of the contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed 10% of the contract price of the unit or units so delayed.

17. Model Certificate for Tenders:

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.

18. Model Certificates for Tenders for Work involving possibility of sub contacting:

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub contracting to contracting from such countries I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub contract any work to a contract form such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this

regard and is eligible to be considered.

Provide Compliance for the above in Vendor Specified Commercial Terms.

19. NO EMD AND TENDER FEE.

20. Performance Bank Guarantee (PBG) to be furnished as a security for fulfilment of warranty obligations by the successful vendor after satisfactory execution of purchase order/Contract (3% of the value of the purchase order/Contract). Central SUs/PSE/Autonomous bodies are exempted from the production of Performance Bank Guarantee. Instead; an indemnity bond shall be furnished in lieu of PBG.

21. Product Scope: Class I local supplier/ Class II local supplier shall offer only standard and catalogued product for Equipment / Spares Cards / assemblies. If the above offered Equipment / Cards / Assemblies are under development / to be developed the bid will not be considered.

22. PUBLICITY: No publicity of any kind whatsoever in case of PURCHASE ORDER shall be given by the Supplier without prior permission of the Purchaser.

23. SECRECY: The technical information, drawings, specifications and other related documents, forming part of the CONTRACT, are the property of the Purchaser and shall not be used for any other purpose, except for execution of the CONTRACT. All rights, including rights in the event of grant of patent and registration of designs are reserved. The technical information, drawings, specifications, records and other documents shall not be copied, transcribed, traced or reproduced in any other form or otherwise in whole and/or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without Purchasers consent in writing except to the extent required for the execution of this CONTRACT. These technical informations, drawings, specifications and other related documents shall be returned to the Purchaser with approved copies and duplicates, if any, immediately after they have been used for the agreed purpose.

24. Senior Purchase and Stores Officer, ISTRAC, reserves the right to accept or reject any/or all the tenders in part or full without assigning any reasons thereof.

25. Submit the bid on or before due date.

26. Successful vendor has to submit the security deposit. (3 % of the value of the purchase order). Central PSUs/PSE/Autonomous bodies shall be exempted from the payment of security deposit, and instead, an indemnity bond shall be secured from them.

27. VENDORS HAS TO REFLECT THE POINT NO (4), (5) AND (6) IN THEIR BID.

28. TAXES: GST is payable as per applicable rates.

29. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales quotes not permitted. The bids shall be in INR only.

## C. Bid Templates

### C.1 Technical Bid - Cryo-MMIC RF Front-end Development & Realization

#### 1. RF / MMIC/MCM DEVICE TEST/EVALUATION BOARDS (Development & Realization of L-band RF Front-end Cryo-MMICs)

##### Item specifications for RF / MMIC/MCM DEVICE TEST/EVALUATION BOARDS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope of Work # 1	The vendor is required to design, develop, realize, test and deliver specified nos. of L-band RF Front-end Cryo-MMICs along with other accessories mentioned in the List of Deliverables section based on the specifications & technical guidelines provided by ISTRAC.	Yes / No / Explain		
2	Scope of Work # 2	Vendor shall take complete responsibility on the following design, development, realization and qualification steps applicable for the realization of the required Cryo-MMICs:	Yes / No / Explain		
3	Scope of Work # 3	Completely indigenous MMIC designing & packaging of the required Cryo-compatible RF Front-end MMICs to meet the specifications mentioned in this RFP document.	Yes / No / Explain		



4	Scope of Work # 4	Complete cryogenic temperature analysis and relevant MMIC packaging solution for cryogenic operational scenario along with necessary engineering solution to meet the required form factor and cryo-specifications.	Yes / No / Explain		
5	Scope of Work # 5	Submission of the final MMIC design & simulation files (softcopy) to ISTRAC in specified file format for obtaining design clearance from ISTRAC.	Yes / No / Explain		
6	Scope of Work # 6	Obtaining clearance from ISTRAC PDR & CDR committee for final design specification arrived at. Any deviations in design to be vetted & approved by ISTRAC PDR or CDR committee.	Yes / No / Explain		
7	Scope of Work # 7	Realization, testing and qualification of proto-MMICs using corresponding non-soldering Test-jig (Socket-Tester) and mechanically enclosed connectorised evaluation PCBs (Cryo-modules) with compliance to the specified RF, electrical specifications.	Yes / No / Explain		
8	Scope of Work # 8	Supply & qualification of Cryo-modules and external power supply units as well as Control & Status monitoring system for standalone testing of single or multiple Cryo-modules under Cryo-temperatures using Cryo-Dewar facility available at RDA/ISTRAC.	Yes / No / Explain		

9	Scope of Work # 9	Obtaining clearance from ISTRAC committee for production clearance based on acceptance of performance results of proto-MMICs & corresponding Cryo-Modules by ISTRAC committee. Any deviations in design to be vetted & approved by ISTRAC PDR or CDR Committee.	Yes / No / Explain		
10	Scope of Work # 10	Production and realization of all Cryo-MMICs and their qualification testing as per PDR/CDR committee recommendations as well as submission of FAT & SAT report for final clearance.	Yes / No / Explain		
11	Scope of Work # 11	Obtaining clearance from ISTRAC during FAT/SAT against all the performance specifications as per the approved ATP documents. Any deviations in test results to be vetted & approved by ISTRAC FAT/SAT committee.	Yes / No / Explain		
12	Scope of Work # 12	Delivery of all proto & production MMICs along with other accessories hardware at ISTRAC, Bangalore as per the List of Deliverables specified in this RFP.	Yes / No / Explain		
13	Scope of Work # 13	Vendor shall provide manpower support throughout the qualification of Cryo-MMICs for its RF & electrical parameters at ambient & Cryo test set-up available at ISTRAC campus without any additional cost.	Yes / No / Explain		

14	Technical Description (Refer the RFP document attached along with tender)	This requirement is for indigenous design, development & realization of MMICs for L-band RF Front-end working at Cryogenic Temperature (up to 4K) along with MMIC-packaging and GDSII generation for fabrication. The typical components in the required Front-end design include Coupler followed by single or multiple stages of LNAs as shown RFP attached along with tender.	Yes / No / Explain		
15	RF Front-end Cryo-MMIC Specification List:	Values & Conditions mentioned below:	Yes / No / Explain		
16	Cryo-MMIC: Operating Center Frequency	1.3 GHz	Yes / No / Explain		
17	Cryo-MMIC: Bandwidth (3-dB)	Better than 200 MHz	Yes / No / Explain		
18	Cryo-MMIC: Overall Gain	Better than 30 dB	Yes / No / Explain		
19	Cryo-MMIC: Linearity Gain	Better than $\pm 0.5$ dB at 300K	Yes / No / Explain		
20	Cryo-MMIC: Overall Noise Figure at 300K	Better than 1.2 dB	Yes / No / Explain		
21	Cryo-MMIC: Noise Figure Overall at 10K	Better than 0.05 dB	Yes / No / Explain		
22	Cryo-MMIC: Power Dissipation	Less than 60mW per MMIC unit	Yes / No / Explain		
23	Cryo-MMIC: Output P1dB	Better than 10 dBm	Yes / No / Explain		
24	Cryo-MMIC: Safe Input Power handling	10 dBm to 30 dBm	Yes / No / Explain		
25	Cryo-MMIC: Port Coupled	$30 \pm 2$ dB coupling before LNAs	Yes / No / Explain		
26	Cryo-MMIC: Operating Voltage	Maximum $\pm 5$ V (Single or Dual Polarity)	Yes / No / Explain		
27	Cryo-MMIC: Operating Temp.	4 to 300 Kelvin	Yes / No / Explain		

28	Cryo-MMIC: Operating Pressure	Up to 10 <sup>-7</sup> mbar	Yes / No / Explain		
29	Cryo-MMIC: Packaging	Hermetically sealed Ceramic package with bottom-open metallic ground for cooling interface	Yes / No / Explain		
30	Cryo-MMIC: Packaged MMIC Size	5mm × 5mm × 3mm (Max.)	Yes / No / Explain		
31	Cryo-MMIC: Input /Output Impedance	50 ohm (internally matched)	Yes / No / Explain		
32	Cryo-MMIC: Input /Output Return Loss	Better than 12 dB	Yes / No / Explain		
33	Cryo-MMIC: MMIC Design Process	Better than 0.15μm Low Noise pHEMT	Yes / No / Explain		
34	Cryo-Modules : No. of Modules	FOUR or more (based on PDR/CDR committee recommendation	Yes / No / Explain		
35	Cryo-Modules : MMICs on each module	Single or multiple (based on PDR/CDR committee recommendation	Yes / No / Explain		
36	Cryo-Modules : Input/output Connectors	Cryo-compatible Gold-plated SMA (F) for all three ports for each MMIC	Yes / No / Explain		
37	Cryo-Modules : Mechanical Enclosure	Proper mechanical enclosure for Cryo- testing & mounting	Yes / No / Explain		
38	Cryo-Modules : DC Supply Connectors	Cryo-Compatible Nano or Micro D- type (F)	Yes / No / Explain		
39	Cryo-Modules : RF Cables for each Cryo-Modules	THREE nos. of Cryo- Compatible RF Cables (minimum length 2.0 meters) with Gold-plated SMA connectors	Yes / No / Explain		
40	Power Supply : No. of Power Supply units	TWO	Yes / No / Explain		
41	Power Supply : Operating Voltage	As per the required voltages for MMICs	Yes / No / Explain		
42	Power Supply : Operating Current	Suitable for minimum 50 MMICs simultaneously	Yes / No / Explain		
43	Power Supply : Power Supply De- rating	Minimum 50%	Yes / No / Explain		

44	Power Supply : Ripple & Regulation:	Better than 1% or minimum required to meet the MMIC's RF performances	Yes / No / Explain		
45	Power Supply : Power Supply Cable for each Cryo-Modules	SINGLE Cryo-Compatible & connectorised Power Supply cable for each Cryo-Module (minimum length 2.0 meters)	Yes / No / Explain		
46	Control & Status Monitoring system features:	(a) Over Voltage, Over Current protection with alarms (vendor shall add other interlocks based on MMIC design & safety); (b) Automatic current & voltage control feature for optimization of gain & power consumption under cryo-condition and during transients; (c) Monitoring and logging feature of sufficient no. of electrical as well as temperature parameters; (d) Control & data logging with automatic testing of Cryo-Modules along with corresponding power supply unit at ISTRAC Cryo-Facility; (e) Data Logging Rate = better than 1Hz.	Yes / No / Explain		
47	Input Supply	Typical Single phase 230V/50Hz AC supply	Yes / No / Explain		
48	Endurance Tests	(a) 72 hrs. Endurance test of the MMICs at Ambient Temp. as per ISTRAC Approved ATP; (b) 72 hrs. Endurance test of the Cryo-Modules in Cryo-conditions as per ISTRAC Approved ATP at ISTRAC facility.	Yes / No / Explain		

49	Warranty	THREE years, applicable on all delivered hardware (Vendor shall replace the faulty MMICs during warranty period.)	Yes / No / Explain		
50	List of Deliverables # 1	Vendor shall deliver following hardware items: (a) 50 (Proto) + 200 nos. of Hermetically Packaged Diced-chips of Front-end Cryo-MMICs; (b) ONE non-soldering Test-jig (Socket-Tester) with RF Socket for testing all Proto MMICs; (c) FOUR nos. of mechanically packaged & connectorised MMIC modules (Cryo-Modules) for Testing & qualification in Cryogenic Environment; (d) TWO nos. of External MMIC Power Supply units along with adequate nos. of RF & Power supply cables & connectors. Cryo-compatible RF Cables & Power Cables (One set for each Cryo-Module); (e) Control & Status Monitoring setup for automatic testing of Cryo-Modules in cryogenic as well as normal ambient environment.	Yes / No / Explain		

51	List of Deliverables # 2	Softcopies of all the design related items including MMIC design, MMIC Packaging & bonding design, PCB Design Schematics, PCB Layout Designs, Fabrication drawings, simulation model & results, all source codes for FPGA, GUI and firmware (if any) as well as the datasheets of the all the components used.	Yes / No / Explain		
52	List of Deliverables # 3	Documents related to the MMIC Fabrication: (a) MMIC design libraries (PDKs) of the process adopted for MMIC design from the selected Foundry; compatible to the latest ADS & MWO or equivalent tools including temperature dependent model data; (b) Reference number & traceability of the selected wafer/die/MMIC; (c) Process Control Monitor (PCM) data from Foundry; (d) Visual inspection report from Foundry; (e) Failure reports (if any) for all stages of processing, fabrication, testing & handling along with the corrective actions taken.	Yes / No / Explain		

53	List of Deliverables # 4	All the other documentation & reports related to: (a) Realization plan with final approved schematic & layout files; (b) All circuits details & packaging diagrams; (c) Test reports at various design & realization stages Interface Control Document; (d) Quality & Reliability Assurance Plan; (e) ATP, FAT, SAT & Endurance Tests Reports.	Yes / No / Explain		
54	List of Deliverables # 5	NOTE: ISTRAC reserves the right of all the design & drawing files of the overall system executed in this tender.	Yes / No / Explain		
55	RESPONSIBILITY MATRIX	Responsible Entity name is mentioned below for each activity/reponsibility:	Yes / No / Explain		
56	RESPONSIBILITY #1	Detailed Technical Specification generation: [Responsible Entity: ISTRAC]	Yes / No / Explain		
57	RESPONSIBILITY #2	Conversion of the concept and block diagrams into circuit diagram as well as complete designing of the required Cryo-compatible RF Front-end MMICs based on the design specifications & technical guidelines provided: [Responsible Entity: VENDOR with ISTRAC Approval]	Yes / No / Explain		
58	RESPONSIBILITY #3	Obtaining required design kit from Fab house and follow all guidelines as given by Fab house for MMIC Design: [Responsible Entity: VENDOR]	Yes / No / Explain		



59	RESPONSIBILITY #4	Obtaining MMIC design libraries (PDKs) of the process adopted for MMIC design from the selected Foundry; compatible to the latest ADS & MWO or equivalent tools including temperature dependent model data: [Responsible Entity: VENDOR]	Yes / No / Explain		
60	RESPONSIBILITY #5	Obtaining sufficient foundry and design material related to the mentioned processes for successful realization of proposed design: [Responsible Entity: VENDOR]	Yes / No / Explain		
61	RESPONSIBILITY #6	Design Review Checks (DRC) in ADS & MWO or equivalent: [Responsible Entity: VENDOR]	Yes / No / Explain		
62	RESPONSIBILITY #7	Final Design & Simulations of Cryo-compatible RF Front-end MMICs: [Responsible Entity: VENDOR]	Yes / No / Explain		
63	RESPONSIBILITY #8	Initial & Final Tile arrangement and GDSII format file submission: [Responsible Entity: VENDOR]	Yes / No / Explain		
64	RESPONSIBILITY #9	DRC and Final Tile constitution (Proposed designed circuits & foundry PCM cells): [Responsible Entity: VENDOR]	Yes / No / Explain		
65	RESPONSIBILITY #10	Final approval and clearance for MMIC fabrication based on review/simulation: [Responsible Entity: ISTRAC with approval]	Yes / No / Explain		

66	RESPONSIBILITY #11	Fabrication of Mask-sets and Fabrication of Wafers & PCM test: [Responsible Entity: VENDOR]	Yes / No / Explain		
67	RESPONSIBILITY #12	Wafer dicing, sorting, transfer to Gel-pak/ Waffle tray, testing & inspection: [Responsible Entity: VENDOR]	Yes / No / Explain		
68	RESPONSIBILITY #13	Designing & fabrication of appropriate MMIC package: [Responsible Entity: VENDOR]	Yes / No / Explain		
69	RESPONSIBILITY #14	Packaging of Diced-chips as well as evaluation & testing against the RF performance specifications specified: [Responsible Entity: VENDOR]	Yes / No / Explain		
70	RESPONSIBILITY #15	Designing & realization of Socket Tester & evaluation boards as well as demonstration of RF & electrical performance at Vendor's place for all Proto MMICs: [Responsible Entity: VENDOR]	Yes / No / Explain		
71	RESPONSIBILITY #16	Final approval and clearance for Proto-MMICs delivery based on RF performance evaluation & testing results: [Responsible Entity: ISTRAC with approval]	Yes / No / Explain		
72	RESPONSIBILITY #17	Providing test facility for evaluating the mechanically enclosed Cryo-Modules under Cryo-temperatures: [Responsible Entity: ISTRAC]	Yes / No / Explain		

73	RESPONSIBILITY #18	Performance demonstration and qualification of RF & electrical performance at cryo-temperature using Cryo-Modules: [Responsible Entity: ISTRAC & VENDOR with ISTRAC Approval]	Yes / No / Explain		
74	RESPONSIBILITY #19	Final approval and clearance for remaining MMIC production based on Cryo-Modules performance evaluation & test results under ambient & cryo-temperatures: [Responsible Entity: ISTRAC with approval]	Yes / No / Explain		
75	RESPONSIBILITY #20	Production & realization of remaining Cryo-MMICs and their qualification at FAT & SAT as per approved ATP document: [Responsible Entity: ISTRAC & VENDOR with ISTRAC Approval]	Yes / No / Explain		
76	RESPONSIBILITY #21	Final approval and clearance for delivery of Production units of the Cryo-MMICs based on FAT & SAT Results: [Responsible Entity: ISTRAC with approval]	Yes / No / Explain		
77	RESPONSIBILITY #22	Delivery of all the Cryo-MMICs along with other hardware at ISTRAC as per the List of Deliverables mentioned in the RFP: [Responsible Entity: VENDOR with ISTRAC Approval]	Yes / No / Explain		
78	ACCEPTANCE & QUALIFICATION TESTS	List of tests as per the qualification stages are mentioned below:	Yes / No / Explain		

79	QUALIFICATION STAGE #1: RF & Electrical Functionality Tests on all Proto-MMICs (to be conducted at room temperature & pressure, typically at 300K)	List of Tests: (a) Bandwidth, (b) Overall Gain, (c) Gain Linearity, (d) Overall Noise Figure, (e) Power Dissipation, (f) Output P1dB, (g) Safe Input Power handling, (h) Coupling Factor, (i) Input /Output Return Loss. [NOTE: These tests can be done using the Socket-Tester, with the bias-correction done using the Evaluation PCBs made for Cryo-Modules.]	Yes / No / Explain		
80	QUALIFICATION STAGE #2: Hermetic tests on all Proto-MMICs	All the tests listed under RF & Electrical Functionality Tests	Yes / No / Explain		
81	QUALIFICATION STAGE #3: Post Hermetic Tests on all Proto-MMICs	All the tests listed under RF & Electrical Functionality Tests	Yes / No / Explain		
82	QUALIFICATION STAGE #4: Cryo-Temp. Functionality Tests on all Cryo-Modules (to be conducted at cryo-temperature & Vacuum, typically 10K) at ISTRAC Cryo-Dewar Facility	All the tests listed under RF & Electrical Functionality Tests	Yes / No / Explain		
83	QUALIFICATION STAGE #5: Endurance Tests on FOUR Cryo-Modules (Recording of NF & Gain during the test period)	a) 72 hrs. Endurance test at Ambient; b) 72 hrs. Endurance test in Cryo-conditions at ISTRAC facility	Yes / No / Explain		
84	QUALIFICATION STAGE #6: Factory Acceptance Tests (FAT) of all Production-MMICs (to be conducted at room temperature & pressure, typically at 300K)	All the tests listed under RF & Electrical Functionality Tests [NOTE: These tests can be done using the Socket-Tester with previously established bias-corrections during Proto-MMICs testing.]	Yes / No / Explain		

85	QUALIFICATION STAGE #7: Hermetic tests on all Production-MMICs	As per MIL-STD-883, Test Method: 1014 (Seal tests: both fine & gross leak)	Yes / No / Explain		
86	QUALIFICATION STAGE #8: Site Acceptance Tests (SAT) of all Production-MMICs (to be conducted at room temperature & pressure, typically at 300K)	All the tests listed under RF & Electrical Functionality Tests [NOTE: These tests can be done using the Socket-Tester with previously established bias-corrections during Proto-MMICs testing.]	Yes / No / Explain		
87	ACCEPTANCE & QUALIFICATION: NOTE:	Final ATP will be approved by the PDR/CDR committee during the realization process.	Yes / No / Explain		
88	VENDOR EVALUATION CRITERIA	Followings are the vendor evaluation criteria for necessary eligibility for this tender:	Yes / No / Explain		
89	Vendor Evaluation Criteria # 1	The vendor shall be able to do complete indigenous designing & packaging of MMICs as well as they shall be capable of testing & qualification of the MMICs within India.	Yes / No / Explain		
90	Vendor Evaluation Criteria # 2	The vendor shall have experience and expertise in the development of RFIC/MMIC-based modules and shall have team of experienced MMIC design engineers and trained in PCB schematic and layout design, simulation of complex multi-layer boards with control impedance, Signal Integrity (SI), Power Integrity (PI), PCB Fabrication & Assembly.	Yes / No / Explain		

91	Vendor Evaluation Criteria # 3	The vendor shall have executed similar RF MMIC design & development as well as production for any Indian reputed firm including public sectors and R&D institutes within the last five years ending on March 2024.	Yes / No / Explain		
92	Vendor Evaluation Criteria # 4	Vendor shall have an operational Class-10000 (or better) Clean Room Facility within India for handling, packaging the required Die/MMICs within their premises. Vendor shall submit the Class-10000 certificate obtained from an authorized competent agency for their clean room facility.	Yes / No / Explain		
93	Vendor Evaluation Criteria # 5	Vendor shall have genuine licensed copies of professional RFIC/MMIC design & simulation tools, like ADS/AWR/Cadence or equivalent.	Yes / No / Explain		
94	Vendor Evaluation Criteria # 6	Vendor shall submit necessary documents (like Delivery Challans, User satisfaction certificates etc.) specific to each of the above mentioned vendor evaluation criteria along with their technical bid mandatorily. Technical bid submitted by the vendor without these necessary documents is liable to be rejected.	Yes / No / Explain		

95	Vendor Evaluation Criteria # 7	The bid is liable to be rejected by ISTRAC during technical evaluation of the tender, if any of the above conditions is not meeting.	Yes / No / Explain		
96	Delivery Schedule:	Vendor shall comply and meet the delivery schedule table given in the RFP document attached with this tender.	Yes / No / Explain		
97	Production Clause	Vendor shall submit their price details for the MMIC production in the MOQs of 1000, 5000 and 10000 for next 7 years starting from April, 2025 with clear mention of the annual increment rate till 7 years. After successful execution of this tender, the vendor is liable to execute the production of the same Cryo-MMICs based on the production rate specified here till the end of 7th year. Vendor shall provide the compliance for the same in their technical bid. [NOTE: This production cost will not be considered in the lowest bid (L1) calculation for this tender.]	Yes / No / Explain		
98	Realization Guidelines # 1	Vendor shall finalize the design configuration & realization approach of all the sub-systems based on the overall technical specifications provided by ISTRAC	Yes / No / Explain		

99	Realization Guidelines # 2	Vendor shall provide all the design & simulation files along with related records of MMIC Circuitry as well as MMIC packaging & bonding. Vendor shall also provide versions of design and post processed files (Layout, GDS file, Gerber, Drill, Fabrication notes, packaging, bonding, layer stack up, impedance details etc.). Vendor is required to change the design & layout (if needed), based on ISTRAC inputs to meet the technical specifications specified.	Yes / No / Explain		
100	Realization Guidelines # 3	Vendor shall ensure that the MMIC design process is as per specified 0.15µm pHEMT (or better) to meet the required power dissipation parameter with the amplifier design cut-off frequency better than 100GHz.	Yes / No / Explain		
101	Realization Guidelines # 4	Vendor shall update and conduct required design review by ISTRAC in phased manner and take all necessary steps to minimize delay in obtaining design approval by ISTRAC	Yes / No / Explain		
102	Realization Guidelines # 5	The technical information, drawings and other related documents given by ISTRAC in the course of the work should remain the property of ISTRAC/ISRO. The given design/material/documents should not be used by vendor for any other purpose or be duplicated in any case.	Yes / No / Explain		



103	Realization Guidelines # 6	All the components used in the MMIC development and corresponding power supply should be of high quality & reliability to support long-term operation. Adequate de-rating margin shall be kept during the selection of all the selected components. Adequate EMI/EMC protection aspects must be followed in the design.	Yes / No / Explain		
104	Realization Guidelines # 7	Vendors shall provide quality control and reliability analysis report for all the components selected for the hardware realization. Non-conformance, if any, shall be reported to ISTRAC.	Yes / No / Explain		
105	Realization Guidelines # 8	Component population and PCB assembly, surface treatment, mechanical packaging shall be done by the vendor as per industry standards for similar application. The components shall be assembled and soldered on the PCB by the supplier using fully automated SMT setup with pick and place for all standard SMD components.	Yes / No / Explain		
106	Realization Guidelines # 9	All RF connectors shall be from M/s. Huber Shunner/Radiall/Times etc. make only. Other connectors for control and power shall be from M/s. Amphenol etc.	Yes / No / Explain		

107	Realization Guidelines # 10	Vendor shall select or use AC-DC & DC-DC power supplies only from following reputed manufacturers: M/s. TDK-Lambda, GE, GWinstek, Vicor, Cosel etc. The power supply configuration and make shall be approved by ISTRAC during PDR.	Yes / No / Explain		
108	Realization Guidelines # 11	All raw materials, components, connectors, cables, mechanical parts, substrates, PCBs, etc. shall be procured by vendor through qualified sub-vendors. The same shall be approved by ISTRAC during PDR.	Yes / No / Explain		
109	Realization Guidelines # 12	Mechanical packaging of Cryo-Modules/evaluation boards with RF & DC connectors shall be fabricated for a typical cryogenic condition as per ISTRAC approved drawings and shall be suitable as per the Cryo-test Facility available at ISTRAC.	Yes / No / Explain		
110	Realization Guidelines # 13	Adequate test points should be provided in the evaluation PCB boards for the health monitoring and speedy troubleshooting	Yes / No / Explain		
111	Realization Guidelines # 14	The vendor shall maintain complete traceability for all materials, processes and in-process measurement and resulting documentation.	Yes / No / Explain		

112	Realization Guidelines # 15	Vendor shall select the best suitable MMIC-Foundry around the globe based on the Cryogenic temperature requirement of the design. However, vendor shall submit the bifurcated table for Local Content percentage to meet Class-I or II criteria of Make-In-India Clause mentioned in the tender.	Yes / No / Explain		
113	Realization Guidelines # 16	<p>FAILURE REPORTING (during MMIC fabrication and testing):</p> <p>(a) During wafer fabrication &amp; testing, any large-scale deviation of electrical or RF parameters from the defined values should be thoroughly analyzed, understood; and communicated to ISTRAC. Vendor shall submit detailed failure analysis to ISTRAC for the failures observed.</p> <p>(b) Vendor shall ensure that no deviation is introduced due to processes during fabrication, packaging, bonding as well as during testing with Socket-Tester.</p> <p>(c) It is vendor's responsibility to modify and refurbish the MMIC design to finally meet the all the technical specifications mentioned in the tender without extra cost.</p>	Yes / No / Explain		

114	Realization Guidelines # 17	Any changes carried out in the design, drawings or documents during the contract tenure, done by vendor or ISTRAC shall be exclusive property of ISTRAC and shall not be used for any purpose other than agreed upon.	Yes / No / Explain		
115	Realization Guidelines # 18	Operation, reference, maintenance and troubleshooting manuals for both hardware and software should be made available.	Yes / No / Explain		
116	Realization Guidelines # 19	All documents supplied by ISTRAC are the exclusive property of ISTRAC and shall not be used for any purpose other than agreed upon.	Yes / No / Explain		
117	Realization Guidelines # 20	The vendor should have necessary test and measurement equipment for standalone performance qualification of the deliverables at vendor's site.	Yes / No / Explain		
118	Realization Guidelines # 21	The packaged MMICs shall be identified by assigning unique identification code. Marking shall not affect the performance of the MMIC. All the MMICs shall have (if possible) ISRO logo at the front view. Vendors may put their logo at card level or at the rear side.	Yes / No / Explain		

119	Realization Guidelines # 22	Vendor shall do necessary modifications in the design based on ISTRAC committee suggestions & recommendations during PDR & CDR without extra cost.	Yes / No / Explain		
120	Realization Guidelines # 23	Vendor shall submit compliance as per ISRO E-procurement Portal Compliance matrix for this tender as well as the RFP document attached in the online portal.	Yes / No / Explain		

**2. MMICS - PACKAGED (Production Cost after Warranty completion; for MOQ = 1000 Nos. of same MMICs as per PRODUCTION CLAUSE mentioned in the attached RFP document)**

**Item specifications for MMICS - PACKAGED**

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	% Annual Increment in the MMIC Production Cost (MOQ=1000)	Vender shall provide single value in percentage. (This shall be valid for 7 years as per PRODUCTION CLAUSE mentioned in the attached RFP document.)	Yes / No / Explain		

**3. MMICS - PACKAGED (Production Cost after Warranty completion; for MOQ = 5000 Nos. of same MMICs as per PRODUCTION CLAUSE mentioned in the attached RFP document)**

**Item specifications for MMICS - PACKAGED**

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	% Annual Increment in the MMIC Production Cost (MOQ=5000)	Vender shall provide single value in percentage. (This shall be valid for 7 years as per PRODUCTION CLAUSE mentioned in the attached RFP document.)	Yes / No / Explain		

**4. MMICS - PACKAGED (Production Cost after Warranty completion; for MOQ = 10000 Nos. of**

same MMICs as per PRODUCTION CLAUSE mentioned in the attached RFP document)

### Item specifications for MMICS - PACKAGED

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	% Annual Increment in the MMIC Production Cost (MOQ=10000)	Vender shall provide single value in percentage. (This shall be valid for 7 years as per PRODUCTION CLAUSE mentioned in the attached RFP document.)	Yes / No / Explain		

### Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Lowest bid (L1) evaluation criteria:	Lowest bid will be based on only the Development & Realization cost of L-band RF Front-end Cryo-MMICs (Item S. No. 01). The production costs (Item S. Nos. 02, 03, & 04) will not be considered in the lowest bid (L1) calculation for this tender.	Yes / No / Explain		

### Supporting Documents required from Vendor

**1. Vendor shall submit the MMIC production cost details in the format (PRODUCTION COST TABLE) provided in the tender. (Price Bid Related)**

**2. Vendor shall submit the necessary documentary proof for satisfying the Vender Eligibility Criteria mentioned in the tender along with the technical proposal. BID WILL NOT BE CONSIDERED IF NECESSARY DOCUMENTARY PROOFS ARE NOT SUBMITTED.**

5 additional documents can be uploaded by the vendor

## C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	Vendor should be able to supply all the items and should quote for all the items, then only offer will be considered for technical evaluation.	Yes / No / Explain	
2	If any damage is found in the devices, the same will returned to the vendor.	Yes / No / Explain	
3	Vendor shall provide compliance for the each specifications mentioned in the indent.	Yes / No / Explain	
4	Payment Term (Our normal terms of payment is 100% within 30 days from the date of receipt and acceptance of the item at our site)	Yes / No / Explain	
5	Taxes and other costs, if any	Yes / No / Explain	
6	Delivery Period	Yes / No / Explain	
7	Delivery Term	Yes / No / Explain	
8	Security Deposit: FD or BG for 3% of PO value to be submitted after receipt of PO and valid till supply & acceptance.	Yes / No / Explain	
9	Performance Bank guarantee : BG for 3% of PO value to be submitted while claiming payment valid till end of warranty period with a claim period of 60 days.	Yes / No / Explain	
10	SD-cum-Warranty (PBG) (in lieu of SD & PBG as a single instrument): BG for 3% of PO value to be submitted after receipt of PO valid till end of warranty period with a claim period of 60 days.	Yes / No / Explain	

11	<p>DELAY IN COMPLETION / LIQUIDATED DAMAGES :If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as Liquidated Damages a sum of one-half of one per cent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10%) of the contract price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.</p>	Yes / No / Explain	
12	Warranty	Yes / No / Explain	
13	Validity	Yes / No / Explain	
14	<p>Name and Address of the company on whom purchase order to be placed (OEM if any should be added in your E-Procurement profile under Add Agent/Principal without fail). Address indicated here must be available in your profile as a Principal/Agent failing which PO will be placed on the e-procurement address available in the profile.</p>	Yes / No / Explain	
15	<p>Certificate of Undertaking: Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods or services (including consultancy services and non consultancy services) or works (including turn-key projects) only if the bidder is registered with the Competent authority (i.e. DPIIT). Hence, it is mandatory to furnish Certificate of Undertaking as indicated in the tender document.</p>	Yes / No / Explain	



16	<p>Foreign vendors are not permitted to quote. 1.Only Class -I and Class-II Local suppliers as per make in India policy are eligible to participate in the bid. 2. The percentage of local content should be specifically mentioned in the offer, without which will be summarily rejected 3. Preference will be given to class-I Local Supplier and in their absence, class-II Local supplier will be considered.</p>	Yes / No / Explain	
17	<p>This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only. Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India. The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made. In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content. False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.</p>	Yes / No / Explain	
18	Percentage of local content for the quoted item.	Yes / No / Explain	

19	Details of location (s) at which the local value addition is made	Yes / No / Explain	
20	Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales quotes not permitted. The bids shall be in INR only.	Yes / No / Explain	
21	GeM Seller ID: As per Gol OM No. 6/9/2020-PPD dated 24.08.2020 and DO No. 170/CEO-GeM/2020, sellers providing Goods and Services to Central Government Organizations shall be registered on GeM and obtain a unique GeM registered ID. Hence please get registered in GeM and furnish your GeM Seller ID.	Yes / No / Explain	
22	Any other terms	Yes / No / Explain	
23	Micro and Small Enterprises [MSEs] a. In order to avail the benefits extended by Government of India to the Micro and Small Enterprises [MSEs] in respect of Goods and Services as per provision of the policy, MSEs registered with District Industries Centre [DIC] or Khadi and Village Industries Commission [KVIC] or Khadi and Village Industries Board [KVIB] or Coir Board or National Small Industries Commission [NSIC] or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum, or any other Body specified by Ministry of MSME have to submit a copy of Valid Certificate with self-attestation along with the Techno-commercial bid. No Certificate claiming exemption will be entertained after Tender due date.	Yes / No / Explain	
24	b. MSEs are entitled for [i] issue of Tender documents Free of Cost [ii] Exemption of Earnest Money Deposit [EMD]. However, Performance Security is mandatory for Goods and Services.	Yes / No / Explain	
25	c. If the MSE Tenderer[s] is/are SC/ST/Woman entrepreneur owned MSEs, specific mention for the same should be there in the valid certificate submitted by the tenderer.	Yes / No / Explain	
26	d. Tenderers claiming MSME benefit shall furnish copy of UAM no. as uploaded on CPP portal to avail benefit	Yes / No / Explain	

27	In case a bidder is an MSE, registered under NSIC or any other Government Agencies and would like to avail exemptions, offer should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under the Public Procurement Policy.	Yes / No / Explain	
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### C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	RF / MMIC/MCM DEVICE TEST/EVALUATION BOARDS (Development & Realization of L-band RF Front-end Cryo-MMICs)	250.00 Nos.		-		
2	MMICS - PACKAGED (Production Cost after Warranty completion; for MOQ = 1000 Nos. of same MMICs as per PRODUCTION CLAUSE mentioned in the attached RFP document)	1.00 Sets		-		

3	MMICS - PACKAGED (Production Cost after Warranty completion; for MOQ = 5000 Nos. of same MMICs as per PRODUCTIO N CLAUSE mentioned in the attached RFP document)	1.00 Sets		-		
4	MMICS - PACKAGED (Production Cost after Warranty completion; for MOQ = 10000 Nos. of same MMICs as per PRODUCTIO N CLAUSE mentioned in the attached RFP document)	1.00 Sets		-		

**Common charges (Applicable for all items)**

<b>P&amp;F Charges</b>	
<b>Freight Charges</b>	
<b>Installation Charges</b>	
<b>Documentation &amp; Handling Charges</b>	
<b>Other Charges (If any)</b>	