

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

Tender for 2 KW S-Band High Power Amplifier

Bids to be submitted online

Tender No.: ISTRAC/ISTRAC PURCHASE/TR202100036701 dated 21-08-2023

A. Tender Details

Tender No :	ISTRAC/ISTRAC PURCHASE/TR202100036701
Tender Date :	21-08-2023
Tender Classification:	GOODS
Purchase Entity :	ISTRAC PURCHASE
Centre :	ISRO TELEMETRY TRACKING & COMMAND NETWORK (ISTRAC)

2 KW S-Band High Power Amplifier

1) This is a Dual Part Tender. Please submit your Offers separately for Technical and Price Bid under relevant Template. Please upload Price Bid under Price Bid only and no where else. If price is mentioned any where other than Price Bid, your offer will not be considered. 2) Please provide your compliance separately for (a) Performance Bank Guarantee clause (b) Liquidated Damages clause and Security Deposit clause.

A.1 Tender Schedule

Bid Submission Start Date :	21-08-2023 18:00
Bid Clarification Due Date :	18-09-2023 17:00
Bid Submission Due Date :	21-09-2023 17:00
Bid Opening Date :	22-09-2023 10:00
Price Bid Opening Date :	29-09-2023 10:00

B. Tender Attachments

NA

Instructions To Vendors

1. 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.

2. 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.

3. 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 (Sl.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.

4. 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.

5. 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. 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.

3. 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).

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. Delivery Terms: FOR ISTRAC

10. GENERAL TERMS & CONDITIONS FOR BIDDERS: For this procurement, bids from Class I, class II and Non-Local Suppliers are admissible. 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.

C. Bid Templates

C.1 Technical Bid - 2 KW S-Band High Power Amplifier

1. POWER AMPLIFIERS 2 KW S-BAND

Item specifications for POWER AMPLIFIERS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Power Amplifier	2KW S-Band High Power Amplifiers	Yes / No / Explain		
2	Introduction:ISTRAC is augmenting its network of TT&C stations for currently ongoing and future missions operating in S-band. In each TT&C station, high power amplifiers are required to boost the tele-command signal before transmitting to the satellite. The proposed High power amplifier (HPA) is required for this application in a satellite TT&C ground station for supporting uplink tele-command and ranging operations.		-		
3	2.0System Description: Under current RFP, the proposed HPA configuration is given as standalone unit. In stand-alone configuration one High power amplifier will be working along with independent medium power amplifier and amplifier selection will be controlled by ISTRAC. Typical configuration for amplifier is provided in detailed document.		-		

4	High Power Amplifier solution can be based on either single Klystron Tube or multiple solid state amplifier modules working in parallel.		-		
5	In case of Klystron Tube based solution, HPA system offered shall meet following requirements:		-		
6	1.The HPA shall be having klystron tube operating in the band 2025 to 2120 MHz, a power supply converter assembly, and a control / monitor (Local and remote computer interface) and protection system.		-		
7	2.The HPA shall base on latest state of the art technology having multi stage depressed collector (MSDC) klystron tube and associated interfaces.		-		
8	3.The klystron shall be equipped with a motorized tuning and channel selection mechanism that can be preset to any 50 channels in the band 2025 to 2120 MHz, either in local or remote (computer) modes. For each Channel the instantaneous bandwidth shall be min. 8 MHz with small overlap between adjacent channels.		-		
9	4.The HPA shall be protected from damage caused by AC, DC and RF faults and insufficient cooling.		-		

10	5.The power supply access shall be electrically interlocked for operator safety and equipped with suitable mechanism to quickly discharge all high voltage capacitors.		-		
11	6.The high power isolator shall offer a low VSWR to the external waveguide run and antenna feed and protects the klystron from excessive reflected power for a continuous load VSWR of 2.0:1 and will withstand safely the reflected power equal to full rated output of KHPA until the protection circuits shut off the RF signal.		-		
12	7.The beam supply module shall consist of high efficiency, power factor corrected converter modules, that can spread the heat and overlaps current pulses, with minimum line current ripple. It shall have EMI filters for CE compliance.		-		
13	8.The HPA shall have different modes of operations including a power saver mode for operating at a lower output power level.		-		
14	9.The klystron shall have elapsed time indicators for beam and filament hours.		-		
15	10.The KHPA shall have independent control (both in local & remote mode) for filament (heater) on/off and beam supply (HV) on/off.		-		

16	In case of Solid State Amplifier based solution, HPA system offered shall meet following requirements:		-		
17	1.The HPA shall be using multiple RF amplifier modules with high power combiner for producing required RF O/P level for each HPA.		-		
18	2.RF amplifier modules shall be based on High efficiency GaN / LDMOS based device operating with class AB mode (or better) for achieving higher operational efficiency.		-		
19	3.The HPA shall be protected from damage caused by AC, DC and RF faults and insufficient cooling.		-		
20	4.HPA O/p modules shall be protected from excessive reflected power for a continuous load VSWR of 2.0:1 for operation. HPA protection circuit shall switch off the RF transmission for reflected power greater than load VSWR of 2.0:1.		-		
21	5.All high power supply modules shall have minimum current ripple to meet EMI / EMC compliance as per EN61204-3:2000.		-		
22	6.HPA system shall have one band pass filter (preferably between pre-amplifier & main O/P amplifier stage) to achieve required out of band rejection for total system.		-		

23	<p>2.1 System Engineering: The proposed HPA system shall be based on rugged design to achieve reliable operation, specifications and performance requirements for an operational life of min. 10 years. The system design shall include the equipment performance and physical characteristics, sub-assemblies location, materials selection, basic module description and interface design.</p>		-		
24	<p>The vendor shall prove, to the satisfaction of ISTRAC by providing suitable documents, the expected performance of HPA system by means of design calculations, analysis, module level bench test etc. The vendor shall perform the following:</p>		-		
25	<ul style="list-style-type: none"> • Optimization of RF performance (operational efficiency, spurious and harmonics performance, optimization of group delay and noise figure etc.) for realizing overall performance of HPA system. • Optimization of Mechanical subsystem in terms of packaging, thermal analysis, layout optimization etc. • Detailed design for all subsystems / components to meet the optimized RF and mechanical design. 		-		

26	<p>2.2Reviews:The vendor shall adhere to the required technical interface and review requirements that are necessary for total understanding and successful execution of the project. The contractor shall develop and implement a Management Program that clearly defines how the complete project will be managed and controlled.</p>		-		
27	<p>The vendor shall designate a Project Manager (PM) to coordinate timely activities and to act as technical interface with the concern person identified by ISTRAC. The PM shall be directly responsible to coordinate and manage the following tasks:</p>		-		
28	<p>2.2.1 Technical Interface Meeting (TIM):The vendor in his own interest is free to organize Technical Interface Meetings with ISTRAC, at a mutually agreed venue or via audio / video conference, with ISTRAC for exchange of information and review of progress. ISTRAC expects at-least one TIM during product realization phase.</p>		-		

29	<p>These meetings could also be held as informal design reviews and shall serve the purpose the regular monitoring of the progress / address any issues associated with realization of the S-band HPA. The vendor is responsible for designating the subject. Date & mode of such meetings with mutual consent and assure availability of concerned personnel.</p>		-		
30	<p>2.2.2 Progress Review (PR):This review shall address the high level design of the system, mapping the system requirements to the ordered specifications. This review shall take place around 10-12 weeks from the contract commencement. The venue of PR can be ISTRAC, Bangalore or can be via Video conference</p>		-		

31	<p>Party shall deliver all relevant documents required for design review 2 weeks before the actual review.</p> <p>The documents delivered for review shall include:</p> <ul style="list-style-type: none"> •Overall HPA System Overview. •Design considerations and design details of major subsystems. •Performance analysis of major requirements and specifications. •Preliminary analysis of reliability, availability, Maintainability etc. •Mechanical, Environmental and thermal design aspects. •Detailed activity and time schedule. 		-		
32	<p>3.0Quality Assurance: The vendor shall be ISO 9001 certified for Quality Management and Quality Assurance. The party shall have established Quality Assurance Plan (QAP) for executing any contract. The plan shall consist of sequential inspections and progressive Quality Control throughout the developmental and validation cycle.</p>		-		

33	<p>The plan shall detail methods for documenting defects, identifying deficient areas, providing timely correction of deficiencies and recommending solutions to systemic problems. The plan shall assure that the quality of all items supplied and the services provided to ISTRAC, meets the specification requirements and objectives, whether manufactured or processed by the party or procured from sub-contractors or vendors.</p>				
34	<p>4.0 Factory Acceptance Tests: FAT shall be performed by the vendor on major functional and performance parameters of the product that includes hardware and software elements. The supplier shall provide the types of tests to be carried out & the test procedures for carrying out the Factory Acceptance Tests well in advance, for the approval & mutual agreement.</p>				
35	<p>The tests results shall be submitted to ISTRAC for approval, before the actual shipment of the equipment. ISTRAC reserves the right to witness the tests at factory. Accordingly, if any price implication is there for ISTRAC's presence during FAT, same shall be clearly indicated in price bid.</p>				

36	<p>Following is the typical list of test which can be performed before delivery of HPA system to site:</p> <ul style="list-style-type: none"> •RF power Gain and Gain flatness over operating frequency range. •Gain stability over 2 hours. •Out of band rejection, spurious and harmonics measurement. •Phase noise and group delay measurement. •Input and O/P VSWR over operating frequency range. •RF / Thermal / Human protection related interlock checks. •Remote M&C related checks. 		-		
37	<p>5.0 Detailed Specifications:</p> <p>For the HPA system offered ISTRAC (either klystron based or solid state based), detailed specification required are indicated below:</p>		-		
38	Operating Frequency Range	2025 to 2120 MHz	Yes / No / Explain		
39	Output Power at O/P P1 dB (1-dB compression) point	+63.00 dBm / 2000 watts (at WR-430 O/P flange)	Yes / No / Explain		
40	Gain	Min. 65 dB (70 dB typical) at rated O/P.	Yes / No / Explain		
41	Power / Gain Adjustability	0 – 20 dB in 0.5 dB steps	Yes / No / Explain		
42	Gain flatness – for solid state based solution	±1.0 dB max. Over entire operating band ±0.2 dB max. Over any 2 MHz	Yes / No / Explain		

43	For Klystron Tube Type – for Klystron based solution Depressed collector multi cavity with motorized 50 channel high speed tuner, tuned for every 2 MHz, from 2025 MHz to 2120 MHz. Channel bandwidth (1-dB) of min. 10 MHz for every channel with ± 0.5 dB gain flatness.		-		
44	Amplifier construction – for solid state based solution	High reliability GaN / LDMOS device. Class AB (or better) operation for high efficiency.	Yes / No / Explain		
45	Power Stability	± 0.4 dB / 12 hour, at constant drive and temperature	Yes / No / Explain		
46	Out of band Gain Reduction	40 dB min. at Freq. > 2.2 GHz and Freq. < 1.925 GHz	Yes / No / Explain		
47	2nd Harmonic	Better than -70 dBc	Yes / No / Explain		
48	Residual Noise Power	-65 dBW/4 kHz, in pass-band -120 dBW/4 KHz in 2.2 to 2.3 GHz band	Yes / No / Explain		
49	Residual AM	-50 dBc below 1.0 KHz	Yes / No / Explain		
50	In-band spurious	Less than -60 dBc	Yes / No / Explain		
51	AM/PM Conversion (at P3 dB)	4 Degree/dB max. or better	Yes / No / Explain		
52	Inter-modulation	-25 dBc max @ 6 dB Back-off – or better	Yes / No / Explain		
53	Group Delay	1.0 ns/MHz max. linear 0.5 ns/ MHz ² max. parabolic 2.5 ns pk-pk max. ripple	Yes / No / Explain		
54	Group delay stability	<2.0 ns over 8 hours at constant power and temperature	Yes / No / Explain		
55	RF I/P Interface	N/SMA Female, 50 ohms	Yes / No / Explain		

56	RF O/P Interface	Wave guide WR-430, CPRG-430 flange	Yes / No / Explain		
57	RF O/P sample	N/SMA Female on front panel (Typically -60 dBc)	Yes / No / Explain		
58	Input / Output VSWR	1.3:1 or better	Yes / No / Explain		
59	Load VSWR	2.0:1 (for full spec compliance)	Yes / No / Explain		
60	Protection	- Protection against High VSWR (Reflected Power) - Protection against RF I/P overdrive - Protection against High Temp. - Protection against any power supply related fault. - All high voltage related points shall be suitably protected for human safety.	Yes / No / Explain		
61	Cooling	Forced Air with integral blower & Fans. Klystron collector cooling separated From cabinet ventilation.	Yes / No / Explain		
62	Remote M&C Interface	TCP/IP 100 Mbps LAN	Yes / No / Explain		
63	Power Supply	410 V±10%, 3-phase 4-wire AC supply with separate earthing connection. Freq. 47-53 Hz.	Yes / No / Explain		
64	Operating Temperature Range	+5 to +45 deg. C., Max. 95% RH	Yes / No / Explain		
65	Mechanical Configuration	19" Rack mountable, Height up to 20U Preferable	Yes / No / Explain		
66	Acoustic Noise	65 dBA max., measured 1m from unit	Yes / No / Explain		
67	Warranty	Min. Two years	Yes / No / Explain		
68	MTBF	To be provided by party along with supporting documents. Min. 50,000 hours desired.	Yes / No / Explain		

69	MTTR	Less than 2 hours with availability spares	Yes / No / Explain		
70	Local Panel monitoring	All the required monitoring and control parameters of the HPA system shall be available on Local front panel and on remote M&C interface.	Yes / No / Explain		

Document : 2KW S-Band HPA Specs

2. Extended Warranty

Item specifications for Extended Warranty

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Extended Warranty (Apart from 02 years standard warranty)	03 Years	Yes / No / Explain		
2	Warranty should start from the date of acceptance of the unit at ISTRAC.		-		

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	General Specifications: This is a Two PART Public tender. So, bidder shall submit techno-commercial offer and price bid. Techno-commercial bid shall include all commercial terms & conditions, payment schedules etc. and price information.		-		

2	The party shall provide slab wise quotation (for e.g. Qty. 1-2, 3-5,6-10 etc.) for the HPA system.		-		
3	This HPA system is required to be operated in 24/7 basis. So it shall have maximum reliability and very high availability figures.		-		
4	The bidder shall provide complete technical details of the offer with detailed explanation of the function, the various options available and any other information that may be required to evaluate the offer. ISTRAC can reject any incomplete offer.		-		
5	The bidder shall bring out point-by-point technical compliance matrix against all the specifications and functional requirements. The bidder shall explicitly bring out all the points wherever the specifications are not met or exceeded.		-		

6	<p>The party shall be a reputed one with min. 5 years of experience in manufacturing similar equipments. Party shall have supplied at-least five nos of HPA system (1.0 KW CW or above) in S/C/X-band in last 2-3 years.</p>		-		
7	<p>The party shall provide the list of customers, to whom similar systems have been supplied during last three years by them and performance certificates from the concerned.</p>		-		
8	<p>If ISTRAC requires, Party shall provide hands on training covering full installation and operational / maintenance aspects of the offered product after delivery. Any cost implications towards that shall be clearly mentioned by the party in his offer.</p>		-		

9	The party shall be ISO 9001 certified one with established Quality Assurance Plan which shall consist of periodical inspections and progressive Quality Control throughout the developmental and production cycle of the product offered.		-		
10	Delivery of the system shall be in max. 2 phases. First lot min.03 nos shall be delivered in max. 10 months from PO and second lot can be max. 4 months after first shipment. Payment will be based on prorata basis only for delivered items.		-		
11	The bidder shall also provide the quotation for the essential spare cards / modules that may be required for the maintenance of the system at site.		-		

12	The bidder shall guarantee supply of spares and maintenance support for at least 10 years from the date of acceptance of the system.		-		
13	Party shall provide user manual in English. User manual shall also include required information / schematics for first level of trouble shooting at field.		-		
14	The bidder shall also provide the quotation for extended 3 years warranty separately apart from two year standard warranty.		-		
15	The L1 vendor will be selected on the basis of HPAs cost including 3 years Extended warranty cost.		-		

Supporting Documents required from Vendor

1. The bidder shall provide complete technical details, data sheets and other details of the offer with detailed explanation of the function of the system along with Block and schematic diagram.

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	party shall provide minimum three years of standard warranty	Yes / No / Explain	
2	Please supply the items as per terms and conditions of Purchase order.	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Unit Price	Remark
1	POWER AMPLIFIER S 2 KW S-BAND	1.0 - 2.0 Nos.		-			
		3.0 - 5.0 Nos.		-			
		6.0 - 10.0 Nos.		-			
		11.0 - 15.0 Nos.		-			
2	Extended Warranty	7.00 Nos.		-			

Common charges (Applicable for all items)

Additional warranty for two years	
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