

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

Tender for Temperature controller IC

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT II (AVN)/VS202100298401 dated 30-08-2021

A. Tender Details

Tender No : **VSSC/PURCHASE UNIT II (AVN)/VS202100298401**

Tender Date : **30-08-2021**

Tender Classification: **GOODS**

Purchase Entity : **PURCHASE UNIT II (AVN)**

Centre : **VIKRAM SARABHAI SPACE CENTRE (VSSC)**

Procurement of Temperature controller IC

Procurement of Temperature controller IC

A.1 Tender Schedule

Bid Submission Start Date : **30-08-2021 12:00**

Bid Clarification Due Date : **02-09-2021 11:00**

Bid Submission Due Date : **28-09-2021 11:00**

Bid Opening Date : **30-09-2021 11:00**

Price Bid Opening Date : **15-10-2021 11:00**

B. Tender Attachments

NA

Instructions To Vendors

1. Conditions for BIDDER FROM A COUNTRY WHICH SHARES LAND BORDER WITH INDIA

1. 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 for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

2.

Validity of Registration: Registration should be valid at the time of submission of bids and should be valid at the time of placement of order.

3. Any false declaration and non-compliance of the above would be a ground for immediate rejection of offer or termination of the contract and further legal action in accordance with the laws.

2. PROFORMA FOR TERMS AND CONDITIONS OF TENDER for indigenous stores items

1. Where counter terms and conditions/printed or cyclostyled conditions of sale have been offered by the tenders, the same shall not be deemed to have been accepted by the Purchaser unless the Purchaser's specific written acceptance thereof is obtained.

2. The Purchaser reserves the right to accept or reject any quotation fully or partly without assigning any reason therefore.

3. The Contractor shall at all times indemnify the Purchaser against all claims which may be in respect of the stores for infringement of any right protected by Patent, Registration or design or Trade Mark and shall take all risks of accidents or damage which may cause a failure of the supply from whatever causes arising and the entire responsibility for the sufficiency of all means used by him for the fulfilment of the Contract.

4. Successful tenderer will have to furnish in the form of a Bank Guarantee or in any other form as called for by the Purchaser towards adequate security for the materials/property provided by the purchaser for the due execution for the Contract.

5. Specifications: Stores offered should strictly conform to Purchaser's specifications. Deviations, if any, shall 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 quotation. Test certificate, wherever necessary, should be forwarded along with supplies. Wherever options are called for in our specifications, the tenderer should address all such options, wherever specifically mentioned by us, and the tenderer could suggest changes to specifications with appropriate response for the same. Even in such case, the tenderer should state why he cannot meet our specification/s and why he is suggesting the change.
6. Sales Tax and/or other duties/levies, where legally leviable and intended to be claimed, should be distinctly shown separately in the tender
7. Price quoted should be on the basis of FORdelivery at site. The Purchaser will not pay separately for transit insurance, and the risk and cost during transit shall be exclusively the responsibility of the Contractor and the purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.
8. Payment terms are full payment within 30 days from the date of receipt and acceptance of material ordered. Our Bankers are State Bank of India, Branch, (place).
9. Guarantee: The stores offered should be guaranteed for a minimum period of twelve months against defective stores design, operation or manufacture. For defects noticed during the guarantee period, replacement/repair should be arranged free of cost within a reasonable period of such notification. In cases where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
10. Packing and Forwarding: 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 to the Contractor.
11. 5.(a) 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 systems of unit must be furnished.
- (b) Corrections, if any, in the quotation must be attested. All amounts shall be indicated both in words as well as in figures. When there is difference between the amount quoted in words and figures, the amount quoted in words shall prevail.
12. The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed not later than the date specified therein, and failure to do so, without adequate justification, may involve cancellation of the

Contract at the discretion of the Purchaser

13. Quotation should be valid for at least 90 days from the date of opening of the tender.

14. ARBITRATION - In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 as amended from time to time. The arbitration shall be conducted in Bengaluru in the Arbitration and Conciliation Centre â Bengaluru (Domestic and International) as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be âEnglishâ only. Work under the Contract shall be continued by the CONTRACTOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the DEPARTMENT or unless the matter is such that the works cannot be possibly continued until the decision (whether final or interim) of the Arbitrator is obtained.

C. Bid Templates

C.1 Technical Bid - Temperature controller IC

1. INTEGRATED CIRCUITS

Item specifications for INTEGRATED CIRCUITS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Item	Accurate complete single-chip temperature controller IC for Peltier thermoelectric cooler (TEC) modules with on chip power MOSFETS	Yes / No / Explain		
2	Supported type of TEC module	Peltier TEC modules	Yes / No / Explain		
3	Temperature stability	upto 0.001 degC	Yes / No / Explain		
4	Package type	7.1mm x 7.1mm, 48 pin TQFN	Yes / No / Explain		
5	Package height	less than 3mm	Yes / No / Explain		
6	Features	Should have on chip precision integrator and chopper stabilized op amp.	Yes / No / Explain		
7	Configurable parameters	IC should have provision for configuring maximum positive and maximum negative TEC current as well as maximum bipolar TEC voltage	Yes / No / Explain		
8	Thermal shutdown provision	IC should be equipped with thermal shutdown provision with a threshold of 165 degC	Yes / No / Explain		

9	Dedicated pins for alarms	IC should be equipped with over temperature and under temperature alarms for a fixed deviation from the set point	Yes / No / Explain		
10	Operating temperature range	-40degC to +85degC	Yes / No / Explain		
11	Supply voltage	between 3V to 6V	Yes / No / Explain		
12	Type of operation	Bipolar operation for cooling and heating peltier TEC module	Yes / No / Explain		
13	Maximum TEC current drive capability	between +/-2.5A and +/-3.5A	Yes / No / Explain		
14	Output voltage range	between +/-4V and +/-4.5V with a supply of 5V	Yes / No / Explain		
15	On chip reference voltage output	1.5V	Yes / No / Explain		
16	On chip reference voltage load regulation	less than 6mV	Yes / No / Explain		
17	NFET ON resistance	less than 0.09ohm	Yes / No / Explain		
18	PFET ON resistance	less than 0.13ohm	Yes / No / Explain		
19	NFET leakage current	less than 11uA	Yes / No / Explain		
20	PFET leakage current	less than 11uA	Yes / No / Explain		
21	Dedicated pins for TEC current monitor	IC should have a dedicated pin for TEC current monitor	Yes / No / Explain		
22	No load supply current	less than 60mA	Yes / No / Explain		
23	On chip integrator specifications	Open loop gain greater than 110dB CMRR greater than 95dB Input bias current less than 2nA Voltage offset should be less than 3.5mV Gain bandwidth should be greater than 95kHz	Yes / No / Explain		

24	On chip op amp specifications	Input bias current should be less than 11nA Input offset voltage should be less than 210uV Offset voltage drift with temperature should be less than 0.2uV/degC	Yes / No / Explain		
----	-------------------------------	---	--------------------	--	--

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Manufacturer part number and datasheet	Item should be from reputed manufacturer and quote should clearly indicate the full manufacturer part number of the part quoted along with manufacturer datasheet highlighting the specification	Yes / No / Explain		
2	Manufacturer authorization	Supplier should attach authorization to sell/market this product	Yes / No / Explain		
3	Original manufacturer CoC	Original manufacturer COC should be supplied. Stockist/supplier COC shall not be accepted	Yes / No / Explain		
4	Rejection of quotation	Non compliance to 1,2,3 will lead to rejection of the quotation	Yes / No / Explain		
5	MOQ	Quote for MOQ wherever applicable. MOQ specified should be based on manufacturer specifications. If MOQ is mentioned corresponding manufacturer details to be attached	Yes / No / Explain		
6	Original packing offered by manufacturer	No loose packing of the item shall be accepted	Yes / No / Explain		
7	Offer evaluation	In case the offer by a party is technically suitable consolidated lowest offer will be given preference	Yes / No / Explain		

8	Mandatory conditions	Compliance with specifications and reply to all the item specifications and general specifications is mandatory to accept the quote	Yes / No / Explain		
---	----------------------	---	--------------------	--	--

Supporting Documents required from Vendor

- 1. Full part number along with the data sheet**
- 2. Manufacturers Certificate of Conformance (COC)**
- 3. Supplier's manufacturer authorisation to sell/market the product**

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	All items should be accompanied with manufacturers certificate of conformance(COC). Devices supplied without manufactures COC will be rejected.	Yes / No / Explain	
2	ICs date of manufacture should within 5 years	Yes / No / Explain	
3	ICs should be packed neatly	Yes / No / Explain	
4	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.	Yes / No / Explain	
5	PO ordering address in full with Contact Persons Name, E-mail id, Phone No. [also attach your Quotation in PDF format].	Yes / No / Explain	
6	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.	Yes / No / Explain	
7	Taxes and other costs, if any. [Please Specify the rates]. Note: All Tax invoices issued by suppliers/service providers on or after July 01, 2017 shall invariably bear their GST registration number (GSTIN) and the applicable GST rates. In the absence of which, the invoices shall not be processed for payment.	Yes / No / Explain	

8	VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @ 5% against IGST EXEMPTION CERTIFICATE.	Yes / No / Explain	
9	Delivery Terms [Normal delivery terms - FOR Destination	Yes / No / Explain	
10	Delivery Period [Please Specify the period, LD Clause applicable]	Yes / No / Explain	
11	Payment [Within 30 days after receipt and acceptance of item at our site	Yes / No / Explain	
12	Quote Validity: Minimum 180 days [for Two Part Tender] from the date of Tender opening. [Mandatory. Otherwise offer will not be considered for evaluation].	Yes / No / Explain	
13	Liquidated Damages @ 0.5% per week subject to maximum of 10% of order value is applicable beyond the promised delivery schedule.	Yes / No / Explain	

14	<p>This is a Two-Part Tender i.e. Part 1: Technical & Commercial, Part-2: Price Bid. Hence all technical & commercial details shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid.</p> <p>2. This being a Two Part Tender, Technical & Commercial part and Price Part separately, the tenderers should not attach any documents containing Pricing information along with Technical & Commercial Bid. We do not open Part - II (Price Bid), if Part I (Technical & Commercial Offer) does not meet with our technical specification requirements. Cost split up, other price details etc. shall be uploaded as a separate documents under - Commercial Documents Solicited from the Vendor-tab.</p> <p>3. Our Tender Enquiry contains technical requirements and specification. The detailed technical specification of your offer should be covered in the technical part. The Technical documents need to be attached online as single PDF file without any price information. Technical bid containing Price details will be treated as unresponsive offers and rejected.</p> <p>4. The prices are to be mentioned only in the price Bid form attached. Any price split up regarding the item, sub-systems of other commercial conditions shall be attached as a separate document. The vendor have to compulsorily submit the compliance statement online otherwise their offer will not be considered for further evaluation. Before entering the compliance statement, vendors are advised to refer the detailed specification provided.</p> <p>5. The Technical Specification/ Drawing/ Product Catalogues/ Works Carried by vendor/ Make offered etc. as a single PDF file without any financial details has to be uploaded online mode by the vendor. This being TWO PART TENDER the PDF document uploaded should not contain any pricing details. If the attached PDF contains any pricing details the offer will be treated as unresponsive and will be summarily rejected</p>	Yes / No / Explain	
----	--	--------------------	--

15	Any other terms	-	
----	-----------------	---	--

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	INTEGRATED CIRCUITS	50.00 Nos.		-		

Common charges (Applicable for all items)

Freight charge	
----------------	--