



www.iter-india.org

ITER-India, Institute for Plasma Research

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ENQUIRY - LOCAL

OFFICE COPY ENQUIRY NO : I-IEN21008
Date : 09/06/2021
Due Date : 29/06/2021 by 5:00 PM (IST)

We invite your rate/s for the following item/s. The Instructions to bidders and Terms & Conditions are attached herewith.

Important Note :


1. Enquiry No., Date & Due Date should appear on the envelope otherwise your offer will be rejected.
2. Address quotation only to the Purchase officer.
3. ITER-India, IPR is entitled to avail concessional rate of GST @ 5% (2.5% CGST and 2.5% SGST) as per Central Goods and Services Tax (CGST) Notification No. 45/2017-Central Tax (Rate) dated 14th November, 2017, State Goods and Services Tax (SGST) Notification No. 45/2017 – State Tax (Rate) dated 15th November, 2017 and IGST @5% as per Notification No. 47/2017-Integrated Tax (Rate) dated 14th November, 2017. Therefore, please consider GST in your quotation accordingly.

Sr No.	Material Description	Quantity	Unit
1	CONTROLLER Controller development for SSPA	1	NOS

Note :

- (1) Submit your quotation in hard copy (sealed envelope superscribing enquiry no and due date) AT THE ABOVE ADDRESS.
- (2) Any clarification on this enquiry may be sought from the Purchase Officer, ITER-India
- (3) Quote with complete technical details.
- (4) Quotation should invariably be submitted in the attached format (Quotation Format) ONLY else ITER-India may not consider your offer.
- (5) Bidders are requested to fill the column of Bidder Specification & notes & comply Yes/No in Technical specifications Annexure-I (duly signed and stamped) and return back along with the offer. Complete Annexure-I shall be signed & stamped on each page by bidder & to be return back along with the offer. This will be considered as acceptance of bidder on Annexure-I.
- (6) Payment shall be made within 30 days from the date of final acceptance of ordered items of purchaser's site and on receipt of error free invoice and other necessary documents at our end.
- (7) Bidder under the category of Micro & Small Enterprise (MSE) for the quoted item/services shall attach MSE certificate. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible under the policy. Traders are excluded from the purview of this Policy. Purchase Preference will be given to the qualified bidders under MSE Category as per applicable Government guidelines at the time of bid evaluation.
- (8) GEM Availability Report Id: GEM/GARPTS/03062021/G3NQGPKXDC68 dated 03.06.2021

Encl:- as above


Rakhi Dharamdasani
Sr. Officer (Purchase & Stores)
ITER-India (IPR)

TERMS AND CONDITIONS

1. The quotation and any order resulting from this enquiry shall be governed by our Conditions of Order and supplier quoting against this enquiry shall be deemed to have read and understood the same in to
2. Where counter terms and conditions have been offered by the Tenderer, the same shall not be deemed to have been accepted by ITER-India unless our specific written acceptance thereof is obtained.
3. Quotation: Your quotation superscripting our enquiry No., date, due date and brief description of item should be submitted to the Purchase Officer, ITER-India in sealed envelope on or before the due date. Late/ Delayed/incomplete quotations will not be considered. Envelopes received without Enquiry number, date, due date and brief description of item may be rejected. The quoted prices should be firm for a period of 90 days from due date for placing order. ITER-India is not bound to accept lowest rate/s. Bidder shall submit the price bid/offer on Bidder's letter head with official seal and sign on each page.
4. The bid documents shall be prepared in English language only
5. All pages of the bid documents shall be numbered. Each page of the bid document shall be stamped and initialized.
6. In the event of any date indicated above is a declared Holiday, the next working day with the same time limit shall become operative for the respective purpose mentioned herein
7. In case of deviation in payment terms including demand of advance other than specified in payment schedule and accepted by ITER-India, prevailing Prime Lending Rate (PLR) of SBI will be loaded for price comparison purpose
8. ITER-India and their authorized representatives may visit the Contractor/Sub-contractors if required as part of technical evaluation process
9. ITER-India reserves the right to place order on one or more parties.
10. Specifications: Material should be offered strictly conforming to our specifications/drawings, if any. Deviation, if any, should be clearly indicated by the supplier in their quotation. The Tenderer should also indicate the Make/Type number of the materials offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation. Clarification/s on specifications/drawings should be obtained from Purchase Officer before submitting quotation.
11. Terms of Prices : Quotation should be submitted on door delivery basis, duly packed & insured without extra charge wherever possible.. In the case of Indian suppliers, the material is to be delivered at our stores free of charge duly packed & insured.
12. Unit rate/s should be valid throughout the validity of Purchase Order for addition/deletion purposes. Break-up of price should be furnished. The quoted price should not be subject to price escalation for whatsoever reasons. The quoted price shall be firm, fixed and non-revisable during the validity/ extended validity of Purchase Order.
13. Prices are required to be quoted according to the units indicated in the tender form/Enquiry. 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.
14. Tender should be free from Correction and Erasures. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail. Unsigned quotations will summarily be rejected.
15. ITER-India 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 portion of the quantity offered and the tenderers shall supply the same at the rates quoted. ITER-India also reserves the right to split the order at its sole discretion.
16. Octroi is not applicable at present.
17. Delivery Date/Period: Delivery period is essence of the Order. Supplier must indicate the firm delivery date by which the materials will be dispatched / delivered by them from the date of our order.
18. Delivery period shall be clearly indicated against each item separately.
19. Inspection: Materials on its arrival at ITER-India will be inspected by our Engineer/Stores In-Charge, and his decision in the matter will be final. However, where the items are required to be inspected at the Suppliers Premises, Supplier has to give advance notice to the Purchaser regarding readiness of the material to enable Purchase/Stores section to depute his representative for inspection.
20. Payment: Payment will be arranged for accepted materials only within 30 days from the date of acceptance of materials at ITER-India and receipt of error free bills in our accounts section, complete in all respects.
21. No correspondence will be entertained within 30 days from the date of receipt of material and bills, whichever is later.
22. Warranty: The Stores/Items offered should be guaranteed for a minimum period of twelve months from the date of acceptance, against defective materials, design, workmanship, operation or manufacture. For defects noticed and communicated during the Guarantee period, replacement/rectification should be arranged free of cost within a reasonable period of such notification. In case where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
23. The Contractor/Supplier shall at all times indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent, Registration of design or Trade Mark and shall take all risk of accidents or damage, which may cause failure of supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the Order.
24. Successful tenderer will have to furnish in the form a Bank Guarantee or in Indemnity Bond form as called for by the Purchaser towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material for the due execution of the Order. Insurance for the Free Issue Material shall be arranged by the Supplier/Contractor at his risk and cost.
25. Non-compliance to tender specifications and/or tender scope and/or tender terms and conditions are liable for rejection. Decision of ITER-India in respect of non-compliance shall be final and binding on the bidders.
26. Canvassing in any form with regard to this tender will lead to rejection of the bid.
27. The Project Director, ITER-India reserves the right to accept or reject any quotations fully or partly or to cancel the enquiry without assigning any reasons.
28. This enquiry is not a commitment and the Purchaser reserves the right to reject or cancel any or all offers.
29. Jurisdiction: The Order shall be governed by the Laws of India for the time being in force. The Courts of Ahmedabad/Gandhinagar only shall have jurisdiction to deal with and decide any legal or dispute arising out of this Order.
30. Unsuccessful bidders will not be intimated about the results of the enquiry/tender.
31. Purchase will not be responsible for payment of any interest to the Supplier, in case of delay in releasing payment.
32. The price evaluation shall be carried out on Landed price.

FORMAT FOR SUBMISSION OF QUOTATION

Enquiry No. : I-IEN21008
Name Of Party : OFFICE COPY
Quotation No. & Date :
Due on : 29/06/2021 by 5:00 PM (IST)

Sr No.	Material Description	Qty	Unit	Rate	Total
1	CONTROLLER Controller development for SSPA	1	NOS		
				Grand Total	

COMMERCIAL TERMS & CONDITIONS *

Sr.n	Description	Bidder's Compliance
0		
1	Free Door delivery	
2	Packing & Forwarding (To Specify, if any)	
3	Safe Delivery Charges (Please mention if not included in rate mention above)	
4	Delivery Period (Three months from the date of Purchase Order)	Comply Yes/No (In case of No Please provide details)
5	Payment:ITER-India payment terms will apply (Refer Sr. No. 6 of Note)	Comply Yes/No (In case of No Please provide details)
6	Warranty (Refer Sr. No. 22 of Terms and Conditions)	Comply Yes/No (In case of No Please provide details)
7	Validity Period (Refer Sr.No. 3 Of Terms and Condition)	Comply Yes/No (In case of No Please provide details)
8	GST (Not to be included in quoted rates)	
9	GST(Refer Sr.No. 3 of Important Note)	Comply Yes/No (In case of No Please provide details)
10	GST Registration No. (To specify)	
11	Udhyog Aadhar No. & Category (Micro/Small Enterprise, Also specify firm is owned by SC/ST/Woman/General)	
12	Discount(if any)	
13	Remarks	

* Fill in the applicable details

Place:

Authorised Signatory:

Date:

Company Seal

Specifications for hardware and software development for Solid State Power Amplifier (SSPA) controller:

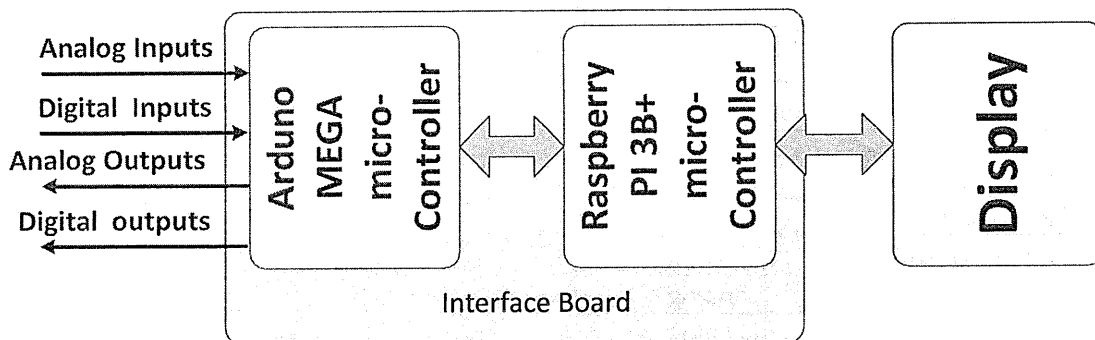
→ Bidder has to procure/develop following hardware:

1. Procurement of RASPBERRY PI-display including Daughter Board, Raspberry Pi 7" Touch Screen Display, wiring and mounting accessories
2. Procurement of Arduino mega 2560 and Raspberry PI 3B+ microcontroller
3. Develop interface board to interface Arduino mega 2560 and Raspberry PI 3B+ microcontroller
4. Interface cable, bias cable & communication cable required to run SSPA controller

→ Bidder has to develop following software code:

1. API in Arduino μ C to acquire Analog/ Digital Input and generate Analog/ Digital output signal listed in Table-1.
2. API for communication/ start up sequence generation between Local Control Unit (LCU-External Control System) and Arduino as per signal listed in table-2.
3. API for communication & data transfer between Arduino & Raspberry PI μ C.
4. GUI based on QtPy for raspberry pi which can be portable with some modification in Windows and Linux.
5. API In Raspberry PI μ C to calculate parameters listed in table-3.
6. API for GUI in Raspberry PI μ C.
7. For Data logging in CSV or any SQL database.
8. API for future use.

SSPA controller block diagram is shown in below figure.



Note: Sign & stamp of bidder required on each pages of Annexure-I



Table No. 1: Signal list

Sr No.	Name	Type
1	PA1_OC	TTL
2	PA2_OC	TTL
3	PA1_UC	TTL
4	PA2_UC	TTL
5	OVER-DRIVE	TTL
6	RF-HIGH	TTL
7	DRIVER-OC	TTL
8	COOLING-FAIL	TTL
9	TEMP-HIGH	TTL
10	DOOR-OPEN	TTL
11	AC-FAIL	TTL
12	PHASE-ERROR	TTL
13	SMPS1-FAIL	TTL
14	SMPS2-FAIL	TTL
15	SMPS3-FAIL	TTL
16	SMPS4-FAIL	TTL
17	OVER_VSWR_OUT	TTL
18	ExtraIN1	TTL
19	ExtraIN2	TTL
20	Reset	TTL
21	PA1_CURRENT	Analog
22	PA2_CURRENT	Analog
23	PA3_CURRENT	Analog
24	PA4_CURRENT	Analog
25	PA5_CURRENT	Analog
26	PA6_CURRENT	Analog
27	PA7_CURRENT	Analog
28	PA8_CURRENT	Analog
29	PA9_CURRENT	Analog
30	PA10_CURRENT	Analog
31	PA11_CURRENT	Analog
32	PA12_CURRENT	Analog
33	PA13_CURRENT	Analog
34	PA14_CURRENT	Analog
35	PA15_CURRENT	Analog
36	PA16_CURRENT	Analog
37	PA17_CURRENT	Analog
38	SMPS1_VOLTAGE	Analog
39	SMPS2_VOLTAGE	Analog
40	SMPS3_VOLTAGE	Analog

Note: Sign & stamp of bidder required on each pages of Annexure-I

41	SMPS4_VOLTAGE	Analog
42	DRIVER_FWD_POWER	Analog
43	DRIVER_REV_POWER	Analog
44	SSPA_FWD_POWER	Analog
45	SSPA_REV_POWER	Analog

Table No. 2: Interface signal list for LCU communication with Arduino

Sr. No	Signal Name	Function	Type
1	AC_status	Provide status of AC supply	TTL/PFC **
2	SMPS_start/stop	Command to operate SMPS	TTL
3	SMPS_status	Status of SMPS health	TTL
4	Gate_ON/OFF	Command to operate gate bias & SSPA_switch1	TTL
5	Gate_status	Status of SSPA ready to operate	TTL
6	SSPA_Fault	Status of SSPA interlock	TTL
7	Over_VSWR	Status of VSWR fault	TTL
8	Reset	Command to reset SSPA fault	TTL
9	Attenuation_con	Command to control Attenuation	Analog
10	RF ON/OFF	Command to operate SSPA_switch2	TTL

Table No. 3: List of parameters required calculation in μ C.

Sr. No	Parameter Name
1	Current Parameter: Min, max and average current calculation from acquired signal PA1_CURRENT to PA16_CURRENT
2	RF Calculation: $VSWR = \frac{1 + \sqrt{\frac{P_r}{P_f}}}{1 - \sqrt{\frac{P_r}{P_f}}}$ $Gain = 10 * \log \frac{RF\ Out}{RF\ in} \text{ dB}$ $Drain\ Efficiency = \frac{RF\ Out}{Vdd * Idd}$ $RF\ Power = Detector\ Output * k$
3	Data logging:

Note: Sign & stamp of bidder required on each pages of Annexure-I



Annexure-I Technical specification for hardware and software development for SSPA controller

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RF power, PA current, Gain, Efficiency & Fault

Table No. 4: GUI tabs information.

Sr. No	Parameter Name	Function
1	Main Tab	RF Power (Pf, Pr), VSWR, Reset, LCU communication signals
2	Current Display	All current & voltage information
3	RF Calculation	RF parameter
4	Fault list	List of fault & Reset

*** Delivery period**

Delivery period for supply is three months from date of release of purchase order (PO).

Bidder Signature		
Name of the signatory & Title	Name	Title
Bidder's Official seal		
Place & Date	Place	DD-MM-YYYY

Note: Sign & stamp of bidder required on each pages of Annexure-I



Technical Comparative Statement

Sr. No.	ITER-INDIA specification	Bidder Specification	Comply Yes/No
1.	<p>Bidder has to procure/develop following hardware:</p> <ol style="list-style-type: none">1. Procurement of RASPBERRY PI-display including Daughter Board, Raspberry Pi 7" Touch Screen Display, wiring and mounting accessories2. Procurement of Arduino mega 2560 and Raspberry PI 3B+ microcontroller3. Develop interface board to interface Arduino mega 2560 and Raspberry PI 3B+ microcontroller4. Interface cable, bias cable & communication cable required to run SSPA controller		
2.	<p>→ Bidder has to develop following software code:</p> <ol style="list-style-type: none">1. API in Arduino μC to acquire Analog/ Digital Input and generate Analog/ Digital output signal listed in Table-1.2. API for communication/ start up sequence generation between Local Control Unit (LCU-External Control System) and Arduino as per signal listed in table-2.3. API for communication & data transfer between Arduino & Raspberry PI μC.4. GUI based on QtPy for raspberry pi which can be portable with some modification in Windows and Linux.5. API In Raspberry PI μC to calculate parameters listed in table-3.6. API for GUI in Raspberry PI μC.7. For Data logging in CSV or any SQL database.8. API for future use.		

Note: Sign & stamp of bidder required on each pages of Annexure-I



Annexure-I Technical specification for hardware and software development for SSPA controller

Enq. No. : I-IEN21008

3.	Bidder has to incorporate signals in API as per Table No.1		
4.	Bidder has to develop API for interfacing signals for LCU communication with Arduino as per Table No.2		
5.	Bidder has to develop API to calculate parameters as per Table No. 3		
6.	Bidder has to develop GUI as per Table No. 4		

Bidder Signature		
Name of the signatory& Title	Name	Title
Bidder's Official seal		
Place & Date	Place	DD-MM-YYYY

Note: Sign & stamp of bidder required on each pages of Annexure-I