GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
CONTROL INSTRUMENTATION DIVISION
Trombay, Mumbai - 400 085

Ref: CnID/2021/RKS/P12118 Date: 1/11/2021

Sub: Fabrication & Assembly of Printed Circuit Boards as per technical specifications in Annexure-1.

Dear Sir / Madam,

1. Quotations are invited for the minor fabrication job as per Annexure-1.

2. Bidder shall quote for fabrication and supply of parts along with material as per bill of quantity and technical specifications.

3. The bidder should have completed similar work with reasonable value (more than 3 lakh) in the last 5 years.

4. Taxes and excise duties shall be quoted separately. Form AF / H whichever is applicable shall be provided, if required.

5. The quotation must reach, Head, Control Instrumentation Division by 11/11/2021, 18:00 hrs and must be sent in a sealed envelope super-scribed with the above reference number and due date given above. The quotation should be sent by speed post only. Quotation should also indicate GST No., PAN No., Sale Tax Registration No. and Service Tax Registration No. of the party.

6. The address on the envelope should read:
The Head, Control Instrumentation Division
RCnD building, Bhabha Atomic Research Centre
Trombay, Mumbai - 400 085
Attention: Shri Vikas Kurariya (contact vskurariya@barc.gov.in for any clarification)

7. The bidder shall have to take an insurance policy against any material issued to him by the purchaser.

8. The fabrication work shall be subject to inspection by our engineer. The finished components shall not be dispatched prior to approval by our engineer, at bidder's works. Necessary inspection facilities should be provided to our engineers during a fabrication at bidder's premises.

9. The bidder shall complete supply, installation and commissioning job within FOUR MONTHS from the date of the firm purchase order issued to the bidder. The finished components shall be delivered by the bidder at North Gate, BARC, TROMBAY, MUMBAI.

10. Head, Control Instrumentation Division, BARC, reserves the right to accept/reject any or all quotations without any reason.

11. Delivery charges if any must be clearly mentioned in the offer. Quotation must also indicate the validity of offer. Quotation must also indicate the GST no. and PAN no. of the party.

12. Drawings / Sketches must be returned along with the offer.

13. The quotation has to be signed by authorized person with company seal.

14. Payment will be made by cheque only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. It may be noted that IT @ 1.5% and surcharge 2% on tax will be deducted from your bills.

15. Job should be guaranteed against material and manufacturing defects & poor workmanship for one year from the date of supply.

Enclosures: 1. Technical Specifications as Annexure-1.
2. General Specifications as Annexure-2.
3. Bill of Material as Annexure-3.

20/10/21

(AnuradhaMayya)
OS & Head, CnID
Bhabha Atomic Research Centre
For and on behalf of President of India

श्रीमती अनुराधा मैय्या / Smt. Anuradha Mayya
अध्यक्ष, नियंत्रण यंत्रीकरण प्रभाग
Head Control Instrumentation Division
भाभा परमाणु अनुसंधान केंद्र
Bhabha Atomic Research Centre
भारत सरकार / Government of India
ट्रॉम्बे, मुंबई-४०००८५ / Trombay, Mumbai-400085.

Inquiry No: CnID/2021/RKS/P12118

Technical Specifications

a. Boards specifications:

1) PCB 1

a) Board size: 103 mm * 41 mm (approx.)
b) Board thickness: 1.6 mm ± 0.1mm
c) No. of layers: 2
d) Copper Foil thickness 35 micron
e) No. of boards to be fabricated: 3
f) Boards will have clear legend print
g) Boards will have solder mask and may have exclusion zones also. All pads will have ENIG finish. The traces in the exclusion zone will also have ENIG finish.
h) The traces in the exclusion zone will also have ENIG finish.

b. Boards specifications:

2) PCB 2

a) Board size: 180 mm * 180 mm (approx.)
b) Board thickness: 1.6 mm ± 0.1mm
c) No. of layers: 2
d) Copper Foil thickness 35 micron
e) No. of boards to be fabricated: 3
f) Boards will have clear legend print
g) Boards will have solder mask and may have exclusion zones also. All pads will have ENIG finish. The traces in the exclusion zone will also have ENIG finish.
h) The traces in the exclusion zone will also have ENIG finish.

c. Scope of the work:

1. Fabrication of boards (Gerber files will be supplied) and performing BBT/FPT: 4 Nos.
2. Procurement & soldering of components on PCBs as per attached BOM (Annexure-3). The fabricator will submit the Certificate of Conformance from the manufacturer of the components or original packing list/copy of delivery challan from the authorized distributors of the components from whom they have procured the components.
3. Optical inspection after assembly of boards.
4. Board material: Glass Epoxy laminated. Type. FR-4 or better.
5. Supplier should be able to fabricate PCBs with Minimum track spacing 8 mil with edging accuracy ±3 mil. Minimum track width 8 mil with edging accuracy ±3 mil. Minimum drill size 10 mil with edging accuracy ±3 mil. Hole registration: within 5 mils.

NOTE: The bidder will have to submit the result of every step and take our permission to go ahead for next sub-step.

d. Guarantee:

The finished boards shall be guaranteed for 1 year against defects and poor workmanship.

e. Deliverables:

The fabricator will have to supply the following:

Populated Fabricated PCBs: 6 Nos.

Component as per BOM as per Annexure 3

COC/Original Packing list/Copy of delivery challan of the manufacturers or their authorised distributors from whom the fabricator procured the components.

Note: please follow the General Specifications as per Annexure-2.

Annexure- 2 (1 sheet)
Inquiry No: CnID/-2021/RKS/P12118
General Instructions

Mandatory requirements

1. Quotation should contain item wise price for all items of our enquiry.
2. Quotation to be submitted considering completion of the work within four months from the date of release of work order.
3. For installation & commissioning, I&C charges and service tax to be quoted separately.
4. All the electronic components, hardware, cables & other items shall be brand new from reputed manufacturers procured from their authorized agents.
5. Board assembly shall follow guidelines specified in IPC-A-610E for acceptance.

General requirements

6. Bidder can suggest equivalent or better make and model number against each suggested Instruments and same to be approved by the customer.
7. Total time to execute the job given above is from the date of work order placed which includes procurements of components, fabrication of PCBs, assembly of PCBs with components and powering up of boards.
8. No Free Issue Material will be provided to the supplier. Materials, tools, manpower etc required for the above work will not be supplied by the user. Supplier has to arrange the above on his own.
9. Deviations in the component size from the PCB layout to be approved by the I/O
10. Additionally, 10% of the total number of individual components used is to be supplied along with the board to take care any later day failure replacement.
11. The supplier must incorporate minor changes (20% of the overall design work) in the design as required at the time of execution of work at no extra cost.
12. Supplier shall submit the list of their clients, and catalogues or literature to support their quotation with the list of similar jobs carried out.
13. During work execution, the supplier shall follow standard practices & procedures for quality assurance.
14. Supplier should have similar work experience and along with the offer, shall submit the details of past experience with documentary proof.
15. **Sub contract**: The supplier shall not sub-contract any or all the work without written consent from the indenter. The supplier shall be responsible to the indenter for all work, the sub-contractor of the supplier, if allowed by the indenter.
16. **Quality surveillance, Inspection**: The fabricator will use standard quality new material for fabrication of PCBs. He will conduct BBT/FPT of all the PCBs. The fabricator will procure components (as per BOM) from the manufacturers or from their authorized distributors. Used or recycled materials will not be accepted.
17. **Acceptance Criterion**: Items meeting the Technical specifications only will be accepted. Any Item not meeting the Technical Specifications are liable for rejection.
18. For the items with detailed specification as given in Annexure-1 shall be subject to surveillance/ inspection by the indenter or his authorized representative.

The Supplier shall quote make of all these items in his quotation.

19. **Without above detailed information offer will be considered incomplete and may be rejected.**

Annexure- 3 (1 sheet)
Inquiry No: CnID/2021/RKS/P12118.
Bill OF Material

Sr.No	Value	Item description	Package	Nos. of Component to be mounted on PCB	Spare Quantity (Nos)
PCB 1					
1	100K	SMD Resistor	M0805	6	19
2	100u	50 V, Electrolytic SMD capacitor	UD-10X10_NICHICON	6	4
3	10u	50V,SMD Capacitor	C1206	3	7
4	12k	SMD Resistor	M0805	3	7
5	2.2u	50V, SMD Capacitor	C1206	15	5
6	22k	SMD Resistor	M0805	3	7
7	25m	SMD Resistor	R2512	3	7
8	275K	SMD Resistor	M0805	3	7
9	475k	SMD Resistor	M0805	6	6
10	69.8k	SMD Resistor	M0805	6	6
11	787E	SMD Resistor	M0805	3	7
12	80.6K	SMD Resistor	M0805	3	7
13	BZX84C5V1LT3G	Zener Diode	TO236	3	2
14	IPP60R099P7XKSA1	MOSFET	TO220BV	3	2
PCB 2					
15	WAGO SCREW CLAMP	WAGO SCREW CLAMP	W237-102	3	7
16	10k	SMD Resistor	M0805	18	32
17	1M	SMD Resistor	M1206	36	14
18	1k	SMD Resistor	M0805	18	32
19	1M	Resistor 0.25 W 1% Tolerance	Through hole	18	82
20	2EDN7424F	Fast Dual Channel 4 A Low-Side Gate Driver	SOIC127P602X173-8N-V	9	2
21	2M	SMD Resistor	M1206 300V	468	200
22	1kOhm	Flat Ceramic HV Resistor 10kV, 3W	50mm x 20mm x 3.5mm with flat connections at both ends	18	82

Kit of Parts:-

Sr No	Value	Item description	Package	Quantity
23	564R60GAT47	470pf 6kV High voltage Ceramic capacitors	Through hole	50
24	HVCC153Y6P471MEAX	470pf 15kV High voltage Ceramic capacitors	Through Hole	50
25	564R60GAD10	1nF 6kV High voltage Ceramic capacitors	Through hole	50
26	HVCC153Y6P102MEAX	1nF 15kV High voltage Ceramic capacitors	Through hole	50
27	1k	Resistor 0.25 W 1% Tolerance	Through hole	100
28	10k	Resistor 0.25 W 1% Tolerance	Through hole	100
29	0.1 ohm	2 watt resistor 0.5% tolerance Axial	Through hole	50
30	MCPS23A-3	Pushbutton Switch, 12 mm, SPST, On-Off, Square Raised, Red	Panel mount	20
31	1MD1T1B5M1QE	Toggle Switch, On-None-On, DPDT,5 A	Panel mount	20
32	1mm,3mm,5mm and 10mm	Heat shrinkable Sleeve		20 meter each

Note: Supplier will deliver PCBs of 6 Nos along with the balance electronic components as per above table.