



Indian Institute of Technology Madras

I.I.T.P.O., MADRAS-600 036

Department of Electrical Engineering

Telephone: 044 2257 5423

Ref.No.

Date: 08/06/2018

ELE	RADA	2018	P.C.B Soldering Station
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Under Certificate of Posting

DUE DATE: 18/06/2018

Dear Sirs,

1. Quotations are invited in duplicate for the various items shown below / overleaf / Enclosed list.
2. The Quotations duly sealed and superscribed on the envelope with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above.
3. The Quotations should be valid for ninety days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms : Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for F.O.R. Madras. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
8. The rate of sales / General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for Sales / General Taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to non Government Educational Institutions run with no profit motive for which a concession. Sales Tax Certificate will be issued at the time of final settlement of the bill.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. Payment : Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is late



Yours faithfully,
डॉ. कृष्ण जगन्नाथन Jagannathan
सहायक प्राध्यापक / Assistant Professor
Head / Project Coordinator

PCB Soldering Station Tender Agreement

Due Date: 18.06.2018, 3:00pm

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of the following items.

- 1) **One unit** of PCB soldering and one **unit of** rework station with appropriate accessories for the 5G lab with the technical specifications indicated below (Technical Specification Section).
- 2) Two-bid system (i.e.) Technical bid and Financial bid in two separate sealed envelopes.
- 3) **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier so as to reach the following address before the due date and time specified in our Schedule:

Mr. Jayasankaran
Room. No: ESB 218/ESB 210D
c/o EE department Office,
Dept. of Electrical Engineering,
IIT Madras-600036.

- 4) **Opening of the tender:** - A committee duly constituted for this purpose will open the offer/Bids. The technical bids will be opened first and a technical committee, which will decide the suitability of the bid as per our specifications and requirements, will examine it.
- 5) **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to the Department. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax & duties should be clearly indicated.

The price should be quoted without custom duty and excise duty, since I.I.T. Madras is exempt from payment of excise duty, and the custom duty will be paid at concessional rate against duty exemption certificate.

In case of import supply, the price should be quoted on EX-WORKS, CIF basis indicating the mode of shipment.

The price may be quoted in USD, Euro and/or INR. The prevailing market exchange rate on the day of bid evaluation will be used to compare bids.

- 6) **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency



commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment.

- 7) **Terms of Delivery:** - The item should be supplied to our Department as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed within three months from the date of Purchase Order.
- 8) IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.

Schedule

- 1) The due date for the submission of the tender is **Due Date: 18.06.2018, 3:00pm**
- 2) The offers / bids should be submitted in two bids systems (i.e.) Technical bid and Financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and Financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover.
- 3) Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.
- 4) Documentary proof for the claimed position and repetition accuracies must be obtained from the principals and submitted along with the relevant pages of the standards.
- 5) **Validity:** Validity of Quotation not less than 90 days from the due date of tender.
- 6) **Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery (**less than one month** from the date of Purchase Order) of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.
- 7) All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.
- 8) **Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**
- 9) **Disputes and Jurisdiction: -**
 - a. **Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the

Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate one arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceedings shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai..

- b. **The Applicable Law:** This Purchase Order shall be construed, interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- 10) All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

Acknowledgement:- It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER
ALONG WITH SEAL OF THE
COMPANY WITH DATE**



Technical Specifications

PCB Soldering and Reworking Station Specifications

Objective - To solder/rework PCB assemblies with either leaded or lead free solder joints without damaging the component or PCB using hot air or direct contact as applicable to the device to be removed/assembled.

PCB soldering Station

We require a soldering unit to solder SOT, SOP, SOIC, QFP, PLCC, QFN, BGA, THT IC's & discrete components upto 01005 form factor.

1. Compatible Tips of different sizes for the above mentioned form factors should be available
2. Contact type soldering - Two soldering irons along with soldering bits of different shapes and sizes as mentioned below to be offered for soldering SMDs and through hole components.
 - a. conical straight cartridge - $\phi 0.1$ mm
 - b. conical straight cartridge - $\phi 0.3$ mm
 - c. conical straight cartridge - $\phi 0.8$ mm
 - d. conical bent cartridge - $\phi 0.1$ mm
 - e. chisel cartridge - 1.0 mm X 0.3 mm
 - f. Knife cartridge - 2.5 mm X 0.3 mm
 - g. conical straight cartridge - $\phi 1$ mm
 - h. chisel cartridge - 1.2 mm X 0.7 mm
 - i. chisel cartridge - 12.4 mm X 0.6 mm
 - j. chisel cartridge - 0.6 mm X 0.3 mm
3. Direct contact soldering - Thermal tweezer facility should be available to solder small SMD chips, resistor and capacitor etc
 - a. conical bent cartridge - 0.7 mm X 1.5 mm
4. Automatic tip cleaning station should be provided.
5. Tip to Ground resistance of hand pieces - <2 Ohm
6. Tip to Ground voltage of hand pieces - < 2 mVRMS
7. Integrated tip with heater element and sensor
8. Paddle to control the heating time of the tips
9. Have built in vacuum to pick up the components. Different sizes of vacuum pads should be available.
10. Vacuum - Should be built in the system without any need for external air supply
11. Temperature range should be up to 350° or more for direct contact rework (soldering irons, thermal tweezer).
12. Control unit's for handpieces -



- a. Control should have digital (2.5" LCD) display for setting and reading process temperature.
 - b. Temperature setting should be in steps of a 5 °C or 1 °C
13. Temperature control - Accuracy should be $\pm 5\%$ around the set value.
 14. Stands for hand handpieces - All hand pieces should be supplied with suitable dedicated stands to place them when they are not in use with BIT cleaning wool.
 15. ESD Compliant - Should comply with ESD-safe stand
 16. Spare parts - Nozzles, Tips, Filaments, filters and other wearable parts should be offered with individual and recommended quantities
 17. Power supply - 230V, 50 Hz single phase A.C
 18. Operating Temp & Humidity - $25 \pm 3^\circ \text{C}$ with relative humidity up to 85 %
 19. Sleep and Hibernation mode - Should be available
 20. Memory to save & recall multiple temperature profile. Facility to lock the settings should be possible to avoid unwanted chances.
 21. USB Station - PC Can connect to control the settings

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PCB Rework station

We require a rework station based on hot air-process to rework PLCC, QFA, QFN and BGA parts.

1. Different types of nozzles should be available to facilitate speedy and efficient desoldering of large SMD packages and through hole components.
2. Thermal tweezer facility should be available to de-solder small SMD chips, resistor (upto 01005 package)and capacitor etc.
3. Component pick up with hot air process -
 - a. Hot air blower should have built in vacuum to pick up de-soldered SMD.
 - b. Different sizes of vacuum pads should be available.
4. Hot air supply and vacuum - Should be built in the system without any need for external air supply
5. Hot Air & vacuum switch ON/OFF - Facility to switch ON/OFF should be available in applicable hand piece
6. Temperature profiling -
 - a. Facility to program a heating cycle for hot air blower with variable temperature and timings.
 - b. Memory to save & recall multiple temperature profile. Facility to lock the settings should be possible to avoid unwanted changes.
7. Temperature range -
 - a. Should be up to 450°C or more for hot air process
 - b. Should be up to 350° or more for direct contact rework (soldering irons, thermal tweezer and T.H.T desoldering gun).
8. Temperature control - Accuracy should be $\pm 5\%$ around the set value.
9. Control unit's for handpieces -
 - a. Control should have digital displays for setting and reading process temperature.
 - b. Temperature setting should be in steps of 1 °C or 5°C minimum
 - c. Control units should generate air & vacuum needed for the process
10. Stands for hand handpieces - All hand pieces should be supplied with suitable dedicated stands to place them when they are not in use with BIT cleaning wool.
11. Have built in vacuum to pick up the components. Different sizes of vacuum pads, extractors and protectors with dimms and tripod should be provided
 - a. extractors
 - i. square extractor - 20 mm X 20 mm
 - ii. rectangular extractor - 20 mm X 26 mm
 - iii. square extractor - 24 mm X 24 mm
 - iv. circular extractor - $\phi 7$ mm
 - b. Protectors
 - i. square protector - 10 mm X 10 mm
 - ii. rectangular protector - 12 mm X 17 mm



c. Tripod

i. metal tripod - ϕ 39 mm (of outer diameter)

12. Hot air flow control - Should be available
13. ESD Compliant - Should comply with E.S.D safe standards
14. Spare parts - Nozzles, Tips, Filaments, filters and other wearable parts should be offered with individual and recommended quantities.
15. Power supply - 230V, 50 Hz single phase A.C
16. Operating Temp & Humidity - $25 \pm 3^{\circ}\text{C}$ with relative humidity upto 85 %
17. Tip to Ground resistance of hand pieces - $< 2 \text{ Ohm}$
18. Tip to Ground voltage of hand pieces - $< 2 \text{ mVRMS}$
19. Sleep and Hibernation mode - Should be available
20. Sleep facility for hot air gun
21. Minimum 2.5" LCD Display
22. USB Station - PC Can connect to control the settings

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