



NATIONAL INSTITUTE OF TECHNOLOGY

ROURKELA-769008 (ODISHA)

An Institute of National Importance under Ministry of HRD, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW/ME/2018/50

Dated: 07/09/2018

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **PCB prototyping machine and accessories**.

Last date of Submission of Bid : **05/10/2018 at 11:00 AM**

Date of opening of technical Bid : **08/10/2018 at 11:00 AM**

For Details:

http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx

Contact: Dr. Tarapada Roy , ME; Ph: +91-661-2462507;

Email: tarapada@nitrkl.ac.in

Bidding through: <https://eprocure.gov.in/eprocure/app>

**sd/-
REGISTRAR**



NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA-769008, ODISHA

(TENDER NOTICE NO.: NITR/PW/ME/2018/50

date: - 07/09/2018)

Procurement of **PCB prototyping machine and accessories.**

Item No	DESCRIPTION	Quantity
1	PCB prototyping machine and accessories	1 Unit

1. Quantity required : **as mentioned above (All information regarding technical specification provided in the Annexure-I)**
2. Delivery : Within **60 days** from the date of purchase order
3. **Last Date of submission of Tender : 05/10/2018 at 11:00 AM**
4. **Date of opening of technical bid : 08/10/2018 at 11:00 AM**
5. The firm should not have been black listed at any time.
6. The submission of following bids by the tenderer should be through <https://eprocure.gov.in/eprocure/app>. Please follow the guidelines as per the portal.

PURCHASE OF PCB prototyping machine and accessories
(Tender Notice No.: NITR/PW/ME/2018/50, dated 07/09/2018)
Due on 05/10/2018 at 11:00 AM

7. **Liquidated damage clause** will be charged for any delay in supply of goods.
8. The validity of the tender shall be **90 days** from the date of opening of the bids.
9. Detailed advertisement including all tender documents is also available in our website at http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx .
10. NIT reserves the right to qualify or deny prequalification of any or all applicants without assigning any reasons.

(REGISTRAR)
NIT, Rourkela
Fax No- 0661-2462022
Ph. No -0661-2472021

Specifications of PCB prototyping machine and accessories

Item No	DESCRIPTION
1	<p>A. <u>Circuit Board Plotter for making PCBs by dry process for making standard/ analogue/ digital/RF circuits:</u></p> <p>Machine in Acoustic cabinet required for drilling, milling and routing of Bare PCBs with following minimum features:</p> <ul style="list-style-type: none">- Machine should have automatic tools changer min 15 tools position at a time to feed and spindle rpm upto 60000.- System should have camera for fiducial recognition, alignment, Automatic offset correction as well as measurement function.- Should be capable to make single side/ double side and multilayer circuits on materials like cem, FR4, FR3 etc and polyamide , special films, aluminium panel engraving of sizes atleast 228x304x34mm.- Machine should be capable of cutting SMD stencil on polyamide films.- Machine should be capable to do 2.5 dimensional operation like front panel/ sign engraving and housing on plastic and aluminium substrates upto atleast 8mm.- Machine should have in -built dispenser to apply glue/epoxy onto the substrates fully automatically with minimum data preparation.- Machine should be capable of making tracks and isolation upto 0.1mm (4mil)-Machine should be capable of drilling min hole dia 0.15mm and above with drilling speed upto 119 strokes/minute. Travel speed should be upto 149mm/second or more.- <u>Machine should be supplied with necessary CAM software to accept import format Gerber Standard (RS-274-D), Extended Gerber (RS-274-X), Excellon NC Drill (Version 1 and 2), Sieb & Meier NC Drill, HP-GL™, DPF, Auto-CAD™ , DXF, ODB ++R etc.</u> <p>The software should have the Editing functions for Original modification, relocating, duplicating, rotating, mirroring, erasing, extending/ severing lines, line/path extension/ shortening, line path/segment parallel shifting, line path/ object polygon conversion (Fill), curve linking/closing capabilities to check the Design Rule Check which can checks conductor path spacing.</p> <ul style="list-style-type: none">- The software should have some Special functions for Routing path generator with breakout tabs, joining/separating objects, step & repeat (multiple PCB), polygon cut-out, ground plane generation with defined clearance. The measuring function should be for measuring & design rule check. <ul style="list-style-type: none">• Hardware/software requirements to be specified by vendor.

Atleast below listed Consumables to be supplied with machine.

- 10 qty Base plate FR4, 229 mm x 305 mm (9"x12"), 0/35 μ m (predrilled)
- 5 qty Base plate FR4, 229 mm x 305 mm (9"x12"), 18/18 μ m (predrilled)
- 5 qty Micro Cutter with distance ring 1/8", 36 mm, 0.1 - 0.15 mm (4 - 6 mil)
- 5 qty End Mills (RF) with distance ring 1/8", 36 mm, d = 0.25 mm (10 mil)
- 5 qty Base plate FR4, 229 mm x 305 mm (9"x12"), 35/35 μ m (predrilled)
- 2 pcs Drill backing plate white, 315 mm X 239 mm X 5 mm
- 1 pc Special-Tape
- 3 qty PCB cleaner
- and following tools
 - 10 pcs milling tool 1/8", 36 mm, 0.2 – 0.5 mm (8 - 20 mil)
 - 2 pcs Micro Cutter 1/8", 36mm, 0.10 – 0.15 mm (4 – 6 mil)
 - 1 pc End mill 1/8", 36mm, d = 0.8mm
 - 2 pcs End mill 1/8", 36mm, d = 1.00mm (39 mil)
 - 2 pcs End mill 1/8", 36mm, d = 2.00mm (79 mil)
 - 1 pc End mill long, 1/8", 38mm, d = 1.00mm (39 mil)
 - 1 pc End mill long, 1/8", 38mm, d = 2.00 mm (79 mil)
 - 2 pcs Counter Router, 1/8, 38mm, d = 1.00mm (39 mil)
 - 2 pcs Counter Router, 1/8", 38mm, d = 2.00 (79 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 0.40 (16 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 0.50 (20 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 0.60 (24 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 0.70 (28 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 0.80 (31 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 0.90 (35 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 1.00 (39 mil)
 - 1 pcs Spiral Drill, 1/8", 38mm, d= 1.20 (47 mil)
 - 1 pcs Spiral Drill, 1/8", 38mm, d= 1.40 (55 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 1.50 (59 mil)
 - 1 pcs Spiral Drill, 1/8", 38mm, d= 1.60 (63 mil)
 - 1 pcs Spiral Drill, 1/8", 38mm, d= 1.80 (71 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 2.00 (79 mil)
 - 2 pcs Spiral Drill, 1/8", 38mm, d= 3.00 (118 mil)

Details of the configuration and deviation must be provided along with technical bid.

B. Through-Hole connection by copper rivets with following items should be quoted:

- 1000 pcs throughplating rivets, diameter inside: 0.6 mm, outside: 0.8 mm
- 1000 pcs throughplating rivets, diameter inside: 0.8 mm, outside: 1.0 mm
- 1000 pcs throughplating rivets, diameter inside: 1.0 mm, outside: 1.2 mm
- 1000 pcs throughplating rivets, diameter inside: 1.2 mm, outside: 1.4 mm
- Also to be quoted Tool tip A, Tool tip B, Punching tool, Anvil and Assembling Tweezer for the process using above rivets.

Details of the configuration and deviation must be provided along with technical bid.

C. Suitable dust extraction system with automatic switching, software controlled complete with filters having power supply 230V, 50Hz, 800W should be supplied with the machine.

Details of the configuration and deviation must be provided along with technical bid.

D. Vendor should quote Complete kit set to apply solder resist and legend print on prototype Printed Circuit Boards. Set should be sufficient for 10 double sided boards in the dimension of A4 and should consist of: solder resist; identification resist; developers; Foils for laser print; conditioner; Cribbing and foam roller etc.

The UV- Exposure unit for exposing solder resist/ Mask or Legend printing, should also be quoted. Hot Air oven for the above process should also be quoted.

Details of the configuration and deviation must be provided along with technical bid.

Other Qualification Criteria:

1. At least five user names and contacts from NIT/IIT/reputed Indian institute/Govt. R&D organizations must be provided where the above equipment and accessories (**Annexure-I**) have been supplied in last five years. Scan copies of the minimum five purchase orders of the above equipment and accessories (**Annexure-I**) must be enclosed along with the technical bid.
2. There must be a local calibration and maintenance center with availability of the spares in India.
3. Scanned copies of the technical brochure of the above equipment and accessories (**Annexure-I**) given in the quotation must be included in the technical bid.
4. Web references must be provided along with the technical bid.
5. Pointwise technical compliance along with any deviation of the mentioned specifications (**Annexure-I**) must be indicated along with technical documents.
6. Income tax return (ITR) of the assessment year 2017-2018 must be provided along with the technical bid.
7. Customized equipment and accessories (as per **Annexure-I**) will not be accepted. The standard equipment and accessories (as per **Annexure-I**) will only be accepted.
8. Dealership Certificate and Proprietary Nature Certificate (If applicable) must be provided along with technical bid.
9. Quoted systems should be complete from single manufacturer only.
10. Prerequisites for Installation should be mentioned along with technical quotation
11. Credentials of the manufacturer to be provided with the technical quotation