



**INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR – 721302**

No. IITKGP/ECE/ENQ/ECL/PM/09/2017-18

Date: 07/02/2018

Sub: Procurement of Universal IC Tester for Electronics Circuit Laboratory, Department of Electronics and Electrical Communication Engineering.

Indian Institute of Technology Kharagpur an Institute of National Importance, invites sealed bids from reputed **Original Equipment Manufacturers or their authorized Distributors / Dealers** who have adequate credential for supply/ installation of the items as per the Annexure – I for the Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, India.

Interested vendors may submit their sealed bids under Two-cover system as per **Technical Specifications** given at **Annexure – I**, and **General Terms & Conditions** given at **Annexure – II**. Kindly refer to the Institute website: www.iitkgp.ac.in {Link: tenders & quotations} for complete tender details.

The tender be sent in a sealed packet, containing to separate sealed envelopes (one each for **Technical Bid and Price Bid**) duly superscripted with **Tender Notice No. IITKGP/ECE/ENQ/ECL/PM/09/ 2017-18, date: 07/02/2018**, to the Office of the **Head, Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, P.O.- Kharagpur Technology, Pin – 721302 West Bengal, India on or before 22nd February 2018, by 3:00 PM.**

For any query pertaining to this bid document, correspondence may be addressed to - Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, P.O.- Kharagpur Technology, Pin – 721302 [Ph.:03222 – 281473]

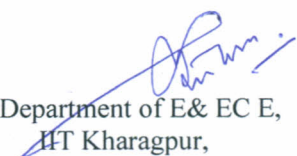
For any technical/specification related query please contact:

Prof.- In- Charge, Electronics Circuit Laboratory,
Department of Electronics & Electrical Communication Engineering, Indian
Institute of Technology, Kharagpur, P.O.- Kharagpur Technology,
Pin – 721302

The technical bid will be evaluated first and price bids will be opened only in respect of those OEMs/Vendors, who are found technically qualified after evaluation Technical bids.

The **technical bids will be opened on 23rd February 2018, at 11:30 AM in the Office of the Head, Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur,**

Encl: **Annexure – I, II**


Head, Department of E& EC E,
IIT Kharagpur,

**Professor & Head
E & E.C.E. Dept.
I.I.T., Kharagpur**

To
The Prof.-In-Charge
Institute Website

Pradipto Mandal
7.2.18
Radhika
7.2.18

ANNEXURE – I

Description and Specification of the stores:

Universal IC tester along with standard features, optional feature and Technical specifications.

Standard Features:

1. Automatically test IC within seconds
2. Conversational mode for testing ICs , simply by keying in IC number which immediately displays Result of test.
3. Test ICs without use of reference IC.
4. Alphanumeric keyboard with single key command for testing every function of the IC
5. Exhaustive functional tests for the complete functions of IC, with pre-programmed logic Pattern in multiple loops.
6. High program memory capacity to store the testing software and directory for all types of ICs
7. Separate 40 pin universal ZIF socket to test LINEAR and DIGITAL IC
8. Expandable software for testing new ICs .
9. De-energise (Potential frees) test(ZIF) socket when not testing.
10. In-built protective interlocks to avoid damage against any fault to IC under test and wrong Usage of system or wrong insertion of IC
11. Highly reliable, spill –proof sealed membrane keyboard with low contact resistance
12. It has auto search facility for digital ICs
13. User memory (RAM) capacity expandable facility.
14. Buzzer to indicate bad ICs
15. Step mode to test by step
16. Serial interface RS 232-c / USB
17. Testing of LCD displays
18. Help message through key

Technical Specifications:

1. Tests a wide range of digital IC's such as 74 series, 40/45 series of cmos IC's
2. It tests a wide range of Analog ICs such as ADC, DAC ,Opamp, 555, 556, Transistor Arrays , Analog Switches , Waveform Generator , Line drivers, Voltages regulators, PLL's, VCO, PWM generator , Sample & Hold , Voltage references, Opto- couplers ,Comparators, Voltage followers and RAMs(2114IC)

The IC Tester should test The following list of ICs:

Digital ICs(TTL series):

7400 7401 7402 7403 7404 7405 7406 7407 7408 7409 7410 7411 7412 7413 7414 7417 7418 7419 7420
7421 7422 7425 7426 7427 7428 7430 7432 7433 7437 7438 7439 7440 7442 7443 7444 7445 7446 7447
7448 7449 7450 7451 7453 7454 7462 7470 7471 7472 7473 7474 7475 7476 7478 7483 7485 7486 7489
7490 7491 7492 7493 7495 7496 7497 74107 74109 74112 74116 74121 74122 74123 74125 74126 74128
74132 74133 74134 74135 74136 74137 74138 74139 74140 74141 74145 74147 74148 74150 74151
74152 74153 74154 74155 74156 74157 74158 74159 74160 74161 74162 74163 74164 74165 74166
74168 74169 74170 74172 74173 74174 74175 74176 74177 74180 74181 74182 74183 74184 74185
74189 74190 74191 74192 74193 74194 74195 74196 74197 74198 74221 74238 74240 74241 74242
74243 74244 74245 74246 74247 74248 74249 74251 74253 74256 74257 74258 74259 74260 74266
74273 74279 74280 74283 74290 74293 74298 74299 74322 74340 74341 74344 74347 74348 74350
74351 74352 74353 74354 74365 74366 74367 74368 74373 74374 74375 74377 74378 74379 74381
74382 74386 74390 74393 74395 74398 74399 74412 74423 74425 74426 74445 74447 74490 74521
74534 74540 74541 74543 74544 74563 74564 74573 74574 74575 74577 74580 74589 74590 74591
74595 74596 74620 74621 74622 74623 74638 74639 74640 74641 74642 74643 74645 74646 74647
74648 74649 74652 74668 74669 74670 74688 74689 74786 74800 74802 74804 74805 74808 74832
74841 74874 74901 74902 74903 74904 74906 74C923 74C925 74C926 74C927 74C928 74C929 74989
741244 741245 741623 741621 741639 741640 741641 741642 741643 741644 741645 743037 743038
74H01 74LS51 74H54 74L54 74L71 74H71 74LS73 74LS76 74LS78 74L85 74L86 74C89 74L93 74L95 74LS107

CMOS (40/45 XX Series) 4000 4001 4002 4006 4007 4008 4009 4010 4011 4012 4013 4014 4015 4017 4018
4019 4020 4021 4022 4023 4024 4025 4026 4027 4028 4029 4030 4031 4032 4033 4034 4035 4038 4040
4041 4042 4043 4044 4047 4048 4049 4050 4054 4055 4056 4060 4063 4067 4068 4069 4070 4071 4072
4073 4075 4076 4077 4078 4081 4082 4085 4086 4093 4094 4095 4096 4098 4099 40105 40106 40107
40109 40147 40160 40161 40162 40163 40174 40175 40181 40182 40192 40193 40194 40195 40244
40245 40257 40373 40374 40097 40098 4490 4502 4503 4504 4506 4507 4508 4510 4511 4512 4514 4515
4516 4518 4519 4520 4522 4526 4527 4528 4531 4532 4534 4539 4541 4544 4555 4556 4558 4562 4566
4584 4585 4599 4801 5801 CPU 8085 8086 V20 8088 8400(Z80)

PERIPHERAL :

8251 8253 8254 8255 8257 8259 8279 8282 8283 8284 8286 8287 8288 8250 82450 6821 6822 6840 6844
6845 6850 6851 6852 6854 6520 6521 6522 6524 6551 65C51 8420(Z80-PIO) 8430(Z80- CTC) 8440 (SIO-0)
8441 (SIO-1) 8442 (SIO-2) 8449 (SIO-90) 1852 1871 1879 2681

MEMORY :

2102 2114 2115 2125 2149 6116 6264 62256 621024 9101 91L22 93412 93422 93425 4256 41256 5025

DECODER/ENCODER:

1441 1442

SEVEN SEGMENT DISPLAY:

LT542 LT543

OSCILLATOR / DIVIDER:

5369

LINEAR IC'S

ANALOG TO DIGITAL CONVERTER

ADC0800 ADC0801 ADC0802 ADC0803 ADC0804 ADC0805 ADC0808 ADC0816 ADC0817 AD574 7109 3162
ADC0809

COMPARATOR :

106 111 160 193 211 260 293 311360 393 2903 17393 CA3290 111 119 139 161 211 219 239 261 311 319
339 361 2901 3302 17339 521 522 527 529 2111 2211 2311

OP-AMP:

AD548 AD648 AD707 AD708 AD711 AD712 AD744 AD746 AD821 AD845 AD846 AD847 AD848 AD849
CA081 CA082 CA307 CA3100 CA3130 CA3140 CA3193 CA3240 CA3160 CA3260 LF 351 353 386 412 442 LM
10 11 101 107 108 112 118 143 155 156 157 158 201 207 208 212 218 255 256 257 258 301 307 308 312
318 343 355 356 357 358 411 441 530 531 532 538 714 725 741 748 1458 1558 2904 3080 33181 4250
4558 5204 5205 5230 5512 5532 5534 5535 13741 17301 17741 17458 17558 OP05 OP07 OP21 OP27 OP37
OPA121 OPA602 OPA606 OPA11 TL061 TL062 TL071 TL072 TL081 TL082 LT1013 709 1709 7611 7612 7621
AD713 AD840 AD841 AD842 CA084 LM 11 101 107 108 112 118 124 147 148 149 201 207 208 212 218 224
248 249 301 307 308 312 318 324 347 348 349 442 444 534 725 741 747 748 2900 2902 3303 3403 3503
5514 17301 17741 TL064 TL074 TL084 OPA404 7641 7642 LT1014 524 5533

ANALOG SWITCH:

4016 4051 4052 4053 4066 6108 6208 11201 11202 11331 11508 11509 13201 13202 13331 11332 13332
13508 13509 14016 14051 14052 14053 14066 DG200 DG201 DG202 DG308 DG309 DG211 DG212 DG506
DG507 DG508 DG509

WAVEFORM GENERATOR: 8038

TIMER:

555 556 7555 PLL 565 567N 4046

VCO:

131 231 331 131A 231A 331A 4151 566N

SAMPLE AND HOLD:

198 298 398 5537

PWM GENERATOR:

1524 2524 3524 494 594 3525 DPM IC 7106 7107 7116 7117 7126 7136 7137

OPTO-COUPLER :

4N25 4N26 4N27 4N28 4N32 4N33 4N35 4N36 4N37 4N38 6N135 6N136 6N137 6N138 6N139 6N140
CNY171 CNY172 CNY173 H11A1 H11C1 H11C4 H11D1 H11D2 H11G1 H11G2 MCT2 MCT2E MCT6 MCT26
MCT210 MCA230 MCA231 MCA255 MOC3006 MOC3010 MOC3020 MOC3021 MOC3022 MOC3023
MOC3030 MOC3040 MOC3041 MOC3061 MOC3063 TIL111 TIL112 TIL113 TIL114 TIL115 TIL116 TIL117
TIL118 TIL119 TIL126 TIL155 HCPL 2531 2631 2731 2502 2602 2601 2630 3700 SFH600_0 SFH600_3
SFH610_1 SFH610_2 SFH611_1 SL5500 SL5501 PC817 PS2041 2501 EECF

VOLTAGE REGULATOR:

7805 78L05 78M05 78T05 7806 7808 7812 7815 7824 7905 79L05 79M05 7906 7908 7915 7918 117 117L
117M 217 217L 217M 317 317L 317M 337 18512 28512 38512 18525 28525 38525 2930 2931 723

VOLTAGE REFERENCE :

185_1.2 185_2.5 285_1.2 285_2.5 385_1.2 385_2.5

DOT/BAR Display Driver :

3914 3915

OPAMP AND COMPARATOR:

192 292 392 2924

LED FLASHER:

3909

FREQUENCY TO VOLTAGE CONVERTER :

2907 2917.

3. It tests seven segment display of common cathode and common anode(LT 542)
4. Test by: Truth tables /sequence table comparisons.
5. Display: 16x2 Backlit LCD Display
6. Electrical Requirement: 230(+/- 10%), 1 phase, 50Hz

ANNEXURE – II

Sealed bids invite for procurement of the following items from the reputed **Original Equipment Manufacturers or their authorized Distributors / Dealers** who have adequate credential for the Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, India.

01. Universal IC Tester:- 01 Nos. – as per Specifications in Annexure – I

1. **Last date of Submission of sealed Bids: 22nd February, 2018, by 3:00 PM.**
2. **Payment Terms:** After successful installation and commissioning, duly certified by the concerned Head of the Department /Centre, vendor should submit the Bill along with Warranty Certificate duly sealed and signed.
3. **Warranty and Guarantee:** 5 (Five) years warranty on items from the date of successful installation and commissioning.
4. **Delivery of the Store Item:** Store item should be delivered within 30 days from the date of issue of the purchase order.
5. **Price:** Price should be quoted only in India Rupees. The Price quoted must be net, inclusive of packing forwarding, freight, installation at E & ECE Department IIT Kharagpur all other incidental charges. The stores are required to deliver at this Institute under the Vendors' own arrangement free additional charges. The risk of damage or loss in transit if any will be the Vendors'.

Institute will not provide any C or D from. However, subject to availability, way bill / transit permit may be issued.

6. **Conditional offer** will not be accepted. No advance is payable against supply of stores.
7. **Period of Validity:** Bids shall remain valid for acceptance, at least for a period 90 days from the date of opening of the price bid.
8. **Technical bid** must contain a copy of the commercial bid without the prices.
9. **Past performance of the Vendors** will be judged at the time of Technical Evaluation.
10. **The Institute does not bind itself** to offer any explanation to those bidders whose technical bids have not been found acceptable by the Evaluation Committee on the Institute.
11. **Bidders** should enclose the following documents:-
 - i) Detail credentials of the Company
 - ii) Current Income Tax & Sales Tax Clearance certificate, VAT and PAN No.
12. **Vendors** should clearly mention in their bid, if any specification is not met by the quoted product.
13. **All tenders are to be submitted** over to the office of the Head, Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, P.O.- Kharagpur Technology, Pin – 721302 before the due date and time and acknowledgement to be obtained. In case due date happens to be a holiday, the tender will be accepted on the next working day.
14. **The person / officer signing** the tender/bid documents should be delegated with an appropriate Power of Attorney (duly endorsed by a notary public) by the Chief Executive Officer /MD of the Company to sign such documents

15. IMPORTANT

- (i) The Director, IIT Kharagpur, may accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid
- (ii) The Institute at its discretion may change the quantity / upgrade the criteria /drop any item or part thereof, at any time before placing the Purchase Order. Institute at its discretion also reserve the right to verify information submitted and inspect the manufacture facilities, if required to confirm their capabilities
- (iii) In case of any dispute , the decision of the Director, IIT Kharagpur shall be final and binding on the bidders

N.B.: Please Note that the Institute remains closed during Saturday and Sunday.