



**INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR – 721302**

No. IITKGP/ECE/ENQ/ECL/PM/01/2017-18

Date: **23**/10/2017

Sub: Procurement of Digital Storage Oscilloscope 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** and **FORMAT FOR PRICE BID in ANNEXURE-III**. 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 two separate sealed envelopes (one each for **Technical Bid and Price Bid**) duly superscripted with **Tender Notice No. IITKGP/ECE/ENQ/ECL/PM/01/2017-18, date: 23/10/2017**, 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 November. 2017, 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 27th November 2017, at 10:00 AM in the Office of the Head, Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur,

Pradip Mandal
23.10.2017

Encl: Annexure – I, II and III

S.Chog 23/10/17
Head, Department of E& EC E,
IIT Kharagpur,

To
The Prof.-In-Charge
Institute Website

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

ANNEXURE – I

Description and Specification of the stores:

Digital Storage Oscilloscope along with standard features and Technical specifications.

Standard Features:

1. **Autoscale**-Auto scale quickly display any active signals, automatically setting the vertical , horizontally and trigger controls for the best signal display.
2. **Automatic measurement**- It can make different measurements simultaneously.
3. **Waveforms math with FFTs**-Analysis functions include addition, subtraction ,multiplication and Fast Fourier Transforms with four windows.
4. **Auto calibrations**- Automatically calibrates the oscilloscope's vertical and horizontal systems.
5. **Waveforms and setup memories**-Store waveforms or commonly used setups for future reference and use.
6. **Digital filtering**-Digital filtering selections include low pass, high pass, band pass and band reject filters.
7. **Easy connectivity**- i) provide PC connectivity ii) USB for saving setup, wave forms and display to a memorystick.iii)GPIB and RS-232 interfaces connectivity module.
8. TFT colour display.
9. Zoom function.
10. 100MHz wide screen DSO.
11. Help message through key.

Technical Specifications:

1. Bandwidth : 100 MHz
2. Real time Sample Rate: 1GSa/s (Single Channel)
3. Equivalent Sample Rate : 50GSa/s
4. Number of Channel : 2Ch
5. Acquisition Modes : Normal/Average/Peak detect
6. Average : Selectable from 2to 256
7. Vertical Resolution : 8 bits
8. Vertical Sensitivity : 2mv/div- 5v/div (1-2-5 sequence)
9. Rise Time : 5.8 ns
10. Input Impedance : $\geq 1M\Omega // \leq 13pf$
11. Input coupling : DC, AC and GND
12. Maximum input voltage : $\pm 400V_{pp}$
13. Time base Range : 5ns – 50s/div
14. Time Base Accuracy : $\pm 100ppm$ measured over 10ms interval
15. Trigger Sources : CH1, CH2, Ext, Ext/5, AC Line
16. Trigger Modes : Auto, Normal, Single
17. Trigger Type: Edge, Pulse Width, Slope, Video, Alternate
18. Trigger Coupling : AC, DC, LF rej, HF rej
19. Auto Measure : Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPREShoot, FRESHoot, Rise time, Fall time, Freq, Period, +Wid, -Wid, +Dut, -Dut, Bwid, Phase, FRR, FRF, FFF, LRF, LFF
20. Cursor Measure : Manual, Track and Auto measure mode
21. Maths : Add, Subtract, Multiply, FFT
22. Digital Fitter: High Pass, Low Pass, Band Pass and BandReject
23. Waveform Interpolation: Sin x/x, Linear
24. Storage : Internal : 2 Group reference waveforms, 20 waveforms and 20 Steps
USB : BMP, CSV, Waveforms, Setups

25. Communication Port: USB Host, USB Device, RS2323, Pass/Fail
26. Sample Types: Real Time and Equivalent Time
27. FFT: Hanning, Hamming, Blackman-Harrish, rectangular (Sample Size – 1024 Points)
28. Measure Display Modes: Main, Window, Window Zoom, Scan, X-Y
29. Menu Display: 2 Sec, 5Sec, 10Sec, 20Sec, Infinite
30. Probe Attenuator : 1X, 10X
31. Display: 7 inch TFT Colour LCD Display (Passive colour LCD with adjustable brightness)
 - Display Types: Dots and Vectors
 - Persistence : Off, Infinite
 - Format: YT and XY
32. Display Resolution : 480 Horizontal x 234 Vertical pixels
33. Power ; 100-240V AC, 50VA Max
34. Net weight:
35. Dimensions:
36. Accessories: 1:1/120:1 Probe (2pcs), Power Code, USB Cable, Easy Scope Software
37. Sweep Modes: Auto, Normal, Single
38. BW Limit : 20 MHz
39. DC gain Accuracy : $\pm 3\%$ for 10 mV/div

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. Digital Storage Oscilloscope :-10 Nos. – as per Specifications in Annexure – I

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HERE UNDER

- (1) TENDERS ARE INVITED COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S/FIRM'S LETTERHEAD NEATLY PRINTED/TYPED DULYSIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPS CONTAINING THE TENDER SHOULD BE PROPERLY SEALED.SEPARATE SEALED ENVELOPS SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOP.
- (2) TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL.
- (3) PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.
- (4) PRICE BIDS: PRICES ARE TO BE QUOTED FOR DOOR DELIVERY AT IIT KHARAGPUR, CLEARLY SHOWING THE GST RATE. ALL PRICES SHOULD BE QUOTED ONLY IN INDIAN RUPEES.
- (5) PERIOD OF VALIDITY: BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
- (6) SCOPE OF SUPPLY: SHOULD INCLUDE FREE INSTALLATION AND COMMISSIONING
- (7) PAYMENT TERMS
 - A) 90% PAYMENT SHALL BE RELEASED AFTER RECEIPT OF GOODS IN GOOD ORDER AND CONDITION AND SUCCESSFUL INSTALLATION, THEREAFTER CERTIFICATE FROM THE CONCERNED HEAD OF THE DEPARTMENT AND BALANCE 10% PAYMENT SHALL BE RELEASED AFTER SUBMISSION OF PERFORMANCE BANK GUARANTEE (PBG) AMOUNTING TO 10% OF THE PURCHASE ORDER VALUE. THE PBG WILL BE DRAWN FROM ANY NATIONAL/COMMERCIAL BANK VALID FOR THE WARRANTY PERIOD PLUS SIXTY DAYS.
 - B) ENSURE MENTIONING
 - (i) BANK DETAILS OF THE BENEFICIARY AND PAN NUMBER
 - (ii) FULLNAME AND ADDRESS OF THE BENEFICIARY ON WHOM ORDER HAS TO BE PLACED
- (8) WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.
- (9) COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.
- (10) THE EXERCISE DUTY EXEMPTION (10/97)/CUSTOM DUTY EXEMPTION (51/96) CERTIFICATE WILL BE PROVIDED BY THE INSTITUTE ON REQUEST BY THE VENDOR.
- (11) LIQUIDATED DAMAGES: THE STORES SHOULD BE DELIVERED/DISPACHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGE SAT 1% PER MONTH OR PART THERE OF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5% .ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT

THE RISK AND EXPENSE OF SUPPLIER.

- (12) PATENT RIGHTS: THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRDPARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THERE OF IN INDIA.
- (13) ONLY THOSE BIDDERS WHOSE BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL BE INVITED FOR PARTICIPATION IN THE PRICE BID.
- (14) THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BID HAS NOT BEEN ACCEPTED BY THE INSTITUTE.
- (15) CONDITIONAL OFFER WILL NOT BE ACCEPTED.
- (16) LATE TENDERS, TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.
- (17) BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-
- A) CURRENT INCOME TAX AND SALES TAX CLEARANCE CERTIFICATES AND PAN NO.
 - B) BANKER'S SOLVENCY CERTIFICATE
 - C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS
 - D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID.
 - E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED IN THE LAST THREE YEARS SHOULD BE MENTIONED.
- (18) WARRANTY / GUARANTEE: THIS COMPREHENSIVE ONSITE WARRANTY / GUARANTEE SHALL REMAIN VALID FOR **60 MONTHS** AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION INDICATED IN THE CONTRACT.
- (19) THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHOSE TECHNICAL BID HAS NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.
- (20) ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO THE HEAD, DEPARTMENT OF ELECTRONICS AND ELECTRICAL COMMUNICATION ENGINEERING, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR – 721302.

IMPORTANT

- (a) IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. 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.
- (b) Promptly make arrangements for repair and /or replacement of any damaged item(s) irrespective of settlement of claim.
- (c) In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.

For any query pertaining to this bid document correspondence may be addressed to Prof-In-Charge, Electronics Circuit Laboratory, Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, P.O.-Kharagpur Technology, Pin – 721302.

- 1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified Institute holidays.
- 2) Fax, e-mail Tender will not be accepted.
- 3) The General Terms and Conditions as stated above relate to supply of stores /equipment /assets etc. and for specific service other terms and conditions of the Institute will apply.

ANNEXURE – III

FORMAT FOR PRICE BID

Format to be filled up by the Agency

Tender No.....

Dated.....

1. Name of Tender:

2. Name of Firm/Bidder:

3. Address:.....

4. Phone/ Fax/ Mobile/ Email:.....

SL.NO. (a)	Description (b)	UnitBasic Price (inRs.) (c)	GST (in Rs.) (d)	Total(All Inclusive)(inRs.) (e=c+d)
1.	Brand: _____ Model : _____			

**Signature of the bidder with
seal**