विद्युत अभियांत्रिकी विभाग
DEPARTMENT OF ELECTRICAL ENGINEERING
भारतीय प्रौद्योगिकी संस्थान कानपुर
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
कानपुर - 208 016 (भारत)
KANPUR - 208 016 (INDIA)

Phone : (0512)-2597409
2597164
2597454
Fax : (0512)-2590063
Webpage : http://www.iitk.ac.in/ee

Request For Quotation

Enquiry No: IITK/EE/ECL/2017-18/01   *Enquiry Date: August 25, 2017*

Sealed quotations are invited for purchase of "Digital Storage Oscilloscope & Digital Multimeter". Specifications are given below.

S. No.	Product Descriptions		Quantity
1	**Digital Storage Oscilloscope** **Specifications:**		04
	Analog Bandwidth	100MHz	
	Input Channel	02	
	Max Sample Rate	2 GSa/s Half Channel Interleaved, 1 GSa/s per Channel	
	Rise time	≤ 3.5 ns	
	Max memory depth	100Kpts per channel	
	Waveform update rate	>50,000 wfm per second	
	Input coupling	AC,DC	
	Input sensitivity range	1mV/div to 5 V/div	
	Input Impedance	1 MΩ ± 2% (11 pF)	
	Vertical measurement resolution	12 bits with averaging	
	Dynamic range	± 8 divisions from center screen	
	Maximum input voltage	CAT I 300 Vrms, 400 Vpk; transient over voltage 1.6 kVpk	
	DC vertical accuracy±	± [DC vertical gain accuracy + DC vertical offset accuracy + 0.25% full scale]	
	DC vertical gain accuracy	± 3% full scale (≥ 10 mV/div); ± 4% full scale (< 10 mV/div)	
	DC vertical offset accuracy	± 0.1 div ± 2mV ± 1% of offset setting	
	Horizontal resolution	2.5 ps	
	Time base range	5 ns/div to 50s/div	
	Time base accuracy	25 ppm ± 5 ppm	
	Acquisition modes	Normal, Peak detect, Averaging, High resolution mode(12 bits of resolution when ≥ 20 µs/div)	
	Trigger modes	Normal, Auto, Single, Force	
	Trigger coupling	Coupling selections: AC, DC, noise reject, LF reject and HF reject	
	Trigger source	Analog channel, Ext, line	
	Trigger type	Edge, Pulse width, Pattern, Video	
	Cursors types	Amplitude, time , frequency, manual, tracking,	
	Cursors measurements	ΔT, 1/ΔT, ΔV/X, 1/ΔX, ΔY, Phase and Ratio	

	Waveform measurements	All characteristics of voltage & time	
	Waveform operators	Add, subtract, multiply, divide, FFT	
	Digital Filter	LP,HP,BP,BS	
	Display	8.5-inch WVGA color	
	Persistence	Off, infinite, variable persistence	
	Modes	Normal, XY, Roll (Cursor should work in XY mode)	
	Connectivity	High Speed USB 2.0 or later device port and host port	
	Application Software	Capturing Data and waveforms, Real time control from PC, Virtual panel, Cursor and measurement should be enabled on virtual panel, Compatible with Windows Xp or later	
	Operating Temperature	Ambient to +55 °C	
	User Manual & Calibration Certificate	Required	
	Accessories	2 BNC Cables for 2channels, User Manual, Power Cord, Computer Interface cable, Computer Interface Application Software CD	
2	**Precision Digital Multimeter:** **Specifications:**		04
	Main Display resolution	4 ¾ places, 31000 counts	
	RMS measurement	TRMS AC	
	Measuring Category	1000V CAT III/600V CAT IV as per IEC Standard 61010-1	

Voltage(AC/DC)
10uV to 1000V, Resolution: 10uV
Accuracy: $\pm$(% of reading + digits>300),
DC Accuracy: $\pm(0.05 + 3; 0.05 + 20)$, Impedance: 10 GΩ upto 300mV input and $\pm (0.05 + 3)$,
Impedance: 10MΩ
AC Accuracy: $(1.0 + 30)$ upto 300mV input, impedance: 5 MΩ (< 40 pF) and $\pm(0.5 + 30)$,
Impedance: 5 MΩ(< 40pF)
Overload duration: Continuous

Current(AC/DC)
10nA – 10A, Resolution: 10nA, Accuracy: $\pm$(% of reading + digits>300),
Range: 3mA**:** DC Accuracy: $\pm(0.2 + 10)$, AC Accuracy: $(1.0 + 30)$, Drop: (15mV upto300uA and 150mV upto 3mA
Range: 30mA : DC Accuracy: $\pm(0.05 + 10)$, AC Accuracy: $(1.2 + 50)$, Drop: 30mV
Range: 300mA**:**DC Accuracy: $\pm(0.2 + 10)$,AC Accuracy: $(1.2 + 30)$, Drop: 300mV
Range: 10A**:**DC Accuracy: $\pm(0.5 + 10)$, AC Accuracy: $(1.2 + 50)$, Drop: 150mV upto 3A, 400mV above 3A:Overload duration: Continuous(<3A), 5 min (>3A)

	Resistance	**10mΩ to 30MΩ**, accuracy : 0.1 + 6, Max no load voltage 4V($<300\Omega$), 1.5V($>300\Omega$) Overload duration: 1min	
	Capacitance(F)	**1pF to 10000uF** Discharge Resistance(Range) 1.5MΩ(30nF), 150KΩ(3uF), 15KΩ(30uF), 1.5KΩ(10000uF), Overload duration: 1min	
	Diode	4V, Resolution 1mV, accuracy: 0.2 + 3	

	Frequency(Hz)	10Hz - 300KHz, accuracy : 0.1 + 3	
	Temperature (°C)	RTD, pt-100&1k Resolution 0.1°C	
	dB ranges	-48 to +63dB (300mV to 1000V)	
	Continuity test	Yes	
	Probe, Instruction manual, Extra fuse, Calibration certificate	Included	
	Battery Voltage	9V	
		Auto OFF, Low battery Indicator, Display with sound signal ON, Overload Indicator, ON/OFF button,	

We are looking forward to receive your quotations, addressed to the undersigned. The deadline for submission of quotations is **September 15, 2017 at 5:00 PM**.

Terms & Conditions:

➢Quote should be made in two parts: Technical bid & financial bid separately in the sealed envelopes.
➢Financial bid for product whose technical bid is not acceptable will not be opened.
➢If the financial bid is included in the technical bid then quotation will be summarily rejected.
➢The sealed envelopes with the quotes should be superscribed mentioning whether it is a technical or financial bid.
➢Taxes, Packaging, forwarding freight charges, if any, should be mentioned.
➢Quotations should have a validity of a minimum of 60 days with complete technical details of the product.
➢Complete warranty should be at least 5/5/5 Years Onsite/Parts/Service.
➢Maximum educational discount, if any should be offered.
➢Price should be on FOB basis, IIT Kanpur and final.
➢Quotation should carry proper **authorization certificate** from manufacturer.
➢Bidder must have supplied the quoted model in Higher Academic Institution like IIT's and IISER and should attach the credentials.
➢The Manufacturer should have NABL accredited calibration facility in India.
➢The bidders should submit copies of suitable documents in support of their reputation, credentials and past performance.
➢The Institute reserves the right of accepting and rejecting any quotations without assigning any reason thereof.

Thanking you,
Date: August 25, 2017   Yours Faithfully,

(Y. N. Singh)
Professor
Department of Electrical Engineering,
Indian Institute of Technology,
Kanpur-208016 (INDIA)