



**SATYENDRA NATH BOSE NATIONAL CENTRE FOR BASIC SCIENCES**

**[Funded by the Department of Science & Technology, Government of India]**

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Ref. SNB/ENQ/MP/Digital Oscilloscope/15-16/068(WP)

17/04/2015

Sealed quotation is hereby invited for the following items

Sl. No.	PARTICULARS	Qty
01.	<b>DIGITAL OSCILLOSCOPE</b> 200 MHz, 2GS/s, 12Kpts/Ch, 4 channel digital storage oscilloscope with 7" colour display  (Technical Specification attached)	01

Note:

- 1) If quotation is in USD, CIF Kolkata Airport price should be quoted. In case of quotation in INR, FOR price upto S.N. Bose Centre need to be mentioned.
- 2) Validity of quotation should be 90 days from the date of submission
- 3) Minimum one (1) year standard onsite replacement warranty is to be provided from the date of delivery.
- 4) Authorisation Certificate for dealing with quoted items should be enclosed with the quotation.
- 4) Payment will be made after satisfactory receipt of the material at site.
- 5) Delivery period should be mentioned in the quotation.
- 6) Our ref. no. should be mentioned on top of the quotation envelope.
- 7) Quotation for the above item should reach this office by **8<sup>th</sup> May, 2015**.

Thanking you,  
Yours faithfully,

S. K. Singh  
AR (Purchase)

Specification of 200 MHz, 2GS/s, 12Kpts/Ch, 4 channel digital storage oscilloscope with 7" colour display.

<b>Vertical System</b>	
Bandwidth	200 MHz
Rise Time	1.75 ns
Input Channels	4
Vertical Resolution	8-bits
Vertical Sensitivity	2mV/div-5V/div
Bandwidth Limiting Filter	20 MHz
Maximum Input Voltage	±400 Vpk (1 MΩ), 5 Vrms (50 Ω)
Channel-Channel Isolation	≥ 100:1 at 100 MHz
Input Coupling	GND, DC 1 MΩ, AC 1 MΩ, 50 Ω
Input Impedance	1 MΩ ± 2%    18 pF ± 3 pF, 50 Ω ± 2%
DC Gain Accuracy	±3%: 5 mV/div - 5 V/div (fixed gain ranges) ±4%: 2mV/div and variable gain ranges
Offset Range	±800mV: 2mV/div - 200 mV/div ±40V: 206 mV/div - 5 V/div
<b>Horizontal System</b>	
Time/Division Range	2.5 ns/div - 50 s/div
Clock Accuracy	100 ppm
Trigger and Interpolator Jitter	0.5 ns (pk-pk)
<b>Acquisition System</b>	
Sampling Rate (Single Shot)	2 GS/s (interleaved) 1 GS/s (all channels)
Sampling Rate (Equivalent Time)	50 GS/s
Memory Length	24 kpts/Ch on 2 Ch 12 kpts/ch on 4 Ch
Maximum Memory	24 kpts
<b>Acquisition Modes</b>	
Averaging	Selectable Number of Sweeps: 4, 16, 32, 64, 128, 256.
Peak Detect	2.5 ns
Interpolation	Linear, Sin x/x
<b>Probes</b>	
Standard Probes	Qty. (4); 10:1, 1:1 Switchable Passive Probe (one per channel)
Scale Factors	Manual: ÷1, ÷10, ÷100, ÷1000
Calibration Output	1 kHz square wave, 3Vp-p (typical), output to probe hook
<b>Triggering System</b>	
Triggers	Edge, Pulse Width, Video, Slope (Rise Time), Alternate
Modes	Normal, Auto, Single, Stop
Sources	Ch 1 - Ch 4, EXT, EXT/5, AC Line
Coupling Mode	AC, DC, LF Rej, HF Rej
Pre-trigger Delay	memory/(2 * sample rate)
Post-trigger Delay	260 Divisions
Hold-off by Time or Events	100 ns - 1.5 s
Internal Trigger Range	±6 divisions from center
Trigger Sensitivity	1 division: DC - 10 MHz 1.5 divisions: 10 MHz - 200 MHz
External Trigger Sensitivity	Ext: 200 mVpp from DC to 10 MHz 300 mVpp from 10 MHz to 200 MHz Ext/5: 1Vpp from DC to 10 MHz 1.5 mVpp from 10 MHz to 200 MHz
External Trigger Input Range	Ext: ±1.2 V, EXT/5: ±6 V
<b>Display</b>	
Type	Color 7.0 TFT-LCD
Resolution	Wide QVGA; 480 x 234 pixels

Grid Styles	YT (18 horizontal divisions), XY
<b>Internal Storage</b>	
Waveform Storage	20 waveforms and 2 reference waveforms
Setup Storage	20 setups
<b>Measure, Math and Wave Recorder</b>	
Number of Measurements Displayed	5
Measurement parameters	Amplitude, Average, Base, Burst Width, Cyclic RMS, + Duty Cycle, - Duty Cycle, Fall Time, Frequency, Max, Mean, Min, Overshoot, Peak-Peak, Period, Phase, Preshoot, Rise Time, RMS, Top, + Width, - Width, First Rising-Rising, First Rising-Falling, First Falling-Rising, First Falling-Falling, Last Rising-Rising, Last Rising-Falling, Last Falling-Rising, Last Falling-Falling
Number of Math Traces	1
Math	Addition, Subtraction, Multiplication, Division, FFT
Waveform Sequence Recorder	Record and playback a sequence of up to 2,500 waveforms
<b>Input/ Output Interfaces</b>	
USB (Device)	1 USB device port for connecting to PC and printers
	2 USB host ports for flash drives
LAN	LAN port for connection to PC using product software
<b>Power Requirement</b>	
Voltage	100-240 VAC ( $\pm 10\%$ ) at 45 to 400 Hz ( $\pm 5\%$ ). Automatic AC voltage selection
Max power consumption	50W
<b>Environmental and Safety</b>	
Temperature (Operating)	10 °C to 40 °C
Humidity (Operating)	85% RH, 40 °C