



Department of Electrical Engineering
Indian Institute of Technology, Delhi
Hauz Khas, New Delhi 110016

NIQ no. IITD/EE/PLN03-BEEN/EEL100/1

Due Date: 23.12.2013, 5 PM

**Notice inviting quotations for
50 DSOs, 50 Function Generators, 50 Power Supplies**

Sealed quotations are invited for 50 DSOs, 50 Function Generators, 50 Power Supplies. The required specifications are given below. The purchase will be made through a two part bidding process. Technical and Financial bids have to be made separately. Complete technical information should be provided along with the Technical bid. Please refer to the last page on Terms and Conditions for details on how and when to submit Technical and Financial bids.

You may quote for any two, or all three of the items. If quoting for all three items, you may include a package deal in your bid.

Required Minimal Specifications for Digital Storage Oscilloscopes

1. Minimum bandwidth: 40 MHz.
2. Channels: 2.
3. Sample rate on **each** channel: at least 500 MS/s
4. USB ports on front panel to support USB flash drives (at least 4GB drives should be supported).
5. Operating system in the oscilloscope **should not** be Windows or versions thereof.
6. Minimum warranty of 5 years.

Required Minimal Specifications for Function Generators

1. Frequency range for sine and square waves: 10 Hz to 4 MHz.
2. Frequency range for triangle waves: 10 Hz to 4 MHz.
3. Frequency resolution of 0.1 Hz.
4. Frequency stability of ± 20 ppm.
5. Frequency accuracy of ± 20 ppm.
6. Frequency ageing of ± 5 ppm.

7. Amplitude range from 2 mV to 10 V pk-pk, driving a 50 Ω load.
8. Output impedance of 50 Ω .
9. Two 20 dB attenuators should be available for use.
10. Harmonic distortion of -50dBc from 10 Hz to 4 MHz for the sine wave.
11. DC offset control from -5 V to +5 V.
12. Warranty of 5 years.

Required Minimal Specifications for Power Supplies

1. The power supply box should have a variable 32 V/2 A output, a pair of ± 15 V/0.5 A outputs, and a 5 V/1 A output.
2. Line regulation (CV) of 0.01% for the 32 V output, 0.1% for other outputs.
3. Load regulation (CV) of 0.01% for the 32 V output, 0.1% for other outputs.
4. Maximum output ripple of 1 mV rms.
5. Operating temperature from 0 to 50°C.
6. Warranty of 5 years.

Terms and Conditions

1. Please submit the TECHNICAL and FINANCIAL bids in separate sealed envelopes. Mark the two envelopes clearly as “Technical Bid” and “Financial Bid” respectively. Both the sealed envelopes should be sent in a single sealed envelope, clearly marked as “Quotation for 50 DSOs, 50 Function Generators, 50 Power Supplies”. The quote should reach the following address on or before **23.12.2013, 5 PM**.

Prof. G.S. Visweswaran, II-402
Department of Electrical Engineering
IIT Delhi, Hauz Khas
New Delhi, 110016
2. Please quote prices for FOB New Delhi, inclusive of all taxes and duties.
3. Quote should be in Indian Rupees for agents of Indian manufacturers, or in foreign currency, for agents of foreign manufacturers, and needs to be valid for at least three months.
4. Attach all the technical literature and a list of similar installations done in India.
5. If the quote is being submitted by a representative of the manufacturer, a valid agency-ship or dealership certificate authorizing the agent to quote to IIT Delhi on behalf of the manufacturers should be enclosed, **specific to this tender, in original**.
6. Either the Indian agent on behalf of the principal/OEM, or the principal/OEM can bid, but both cannot bid simultaneously.
7. A warranty certificate from the OEM should be submitted, with service authorization.
8. Complete set of manuals for the operation of the equipment should be given.
9. Clearly specify the installation requirements - such as space, power, frequency, environment etc.
10. Please attach a signed and stamped compliance chart for the specifications. The format of the compliance chart is attached to this document.
11. Please specify all of your terms and conditions clearly, including delivery period.
12. Mode of payment for purchases in foreign currency are through irrevocable letter of credit, or through wire transfer on delivery. Only bank charges within India are payable by IIT Delhi, all bank charges outside India are the responsibility of the seller. For purchases in INR, payment is on delivery.
13. The Institute reserves the right to accept or reject any or all quotations without assigning any reasons thereof.

Prof. G.S. Visweswaran
(Chairman, purchase committee)

Compliance chart for DSOs

	Parameter	Requirement	Model spec	Complies?
1	Bandwidth	40 MHz		
2	Channels	2		
3	Sample rate	> 500 MSps		
4	USB flash	at least 4 GB drives		
5	OS on oscilloscope	Not Windows		
6	Warranty	5 year		

Compliance chart for Function Generators

Parameter	Requirement	Model spec	Complies?
Freq range (sine, square)	10 Hz to 4 MHz		
Freq range (triangle)	10 Hz to 1 MHz		
Freq resolution	0.1 Hz		
Freq stability	± 20 ppm		
Freq accuracy	± 20 ppm		
Freq ageing	± 5 ppm		
Ampl range	2 mV to 10 V pk-pk		
Output impedance	50 Ω		
20-dB attenuators	Two		
Harmonic distortion (sine)	-50 dBc		
DC offset control	-5 to +5 V		
Warranty	5 year		

Compliance chart for power supplies

	Parameter	Requirement	Model spec	Complies?
7	Outputs	32V/2A, ± 15 V/0.5A, 5V/1A		
8	Line regulation	0.01% (32V), 0.1% (others)		
9	Load regulation	0.01% (32V), 0.1% (others)		
10	Maximum ripple	1 mV		
11	Operating temperature	0 to 50°		
12	Warranty	5 year		