



**Department of Electrical Engineering
Indian Institute of Technology Madras
Chennai – 600 036, India**

**Prof. Mahesh Kumar
Electrical Engineering Department**

Ref: No. IITM/MK/17-18/MDO


DATE: 26.2.2018

Due date : 15.3.2018

Dear Sir,

1. Quotations are invited in duplicate for the various items shown below/overleaf/**enclosed list**.
2. The **quotations are to be in two parts as Technical Offer and as Commercial offer**: The two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in separate envelopes must be enclosed in the one bigger envelope duly sealed and super scribed with reference number and due date and must be addressed to the undersigned so as to reach him on or before the due date stipulated above.
3. **Fax and Email quotation are not acceptable.**
4. Quotations should be valid for 60 days from the due date and period of delivery required , warranty terms etc. should also be clearly indicated. A minimum of one year warranty is required from the date of commissioning.
5. Imported supplies should be quoted **for CIF Madras**.
6. Local firms to quote for free delivery to this Institute. If quoted for Ex-Godown delivery charges be indicated separately.
7. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples / machine/ equipment if called for should be submitted / demonstrated at free of charges, and collected back at the supplier's expenses. Compliance certificate is to be provided indicating conformity to the technical specifications
8. Sales Tax/General Taxes/ED if applicable and such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. If this is not indicated no such claim will be admitted at any stage. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession is given. Sales Tax Certificate will be issued at the time of final settlement of the bill.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
12. The Guarantee period of the item may be indicated clearly.
13. In case of LC. Payment, 90% of the payment will be made after completion of the supply. The balance 10% of the payment will be made after satisfactory installation of the equipment.
14. IIT Madras is exempt from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
15. **Acceptance and Rejection:-** I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,


Prof. Mahesh Kumar

Items required: **Mixed Domain Oscilloscope (MDO)** as per specifications enclosed.

Phone Nos.: (044) 2257 4429/ /5419 FAX: (044) 2257 4402, E-mail: mahesh@ee.iitm.ac.in



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Detailed Specifications:

General Features

1. **Bandwidth:** 200MHz
2. **Analog channels:** 4 channels
3. **Vertical Resolution:** 8 bits
4. **Waveform updated rate:** >340,000 waveforms per second
5. **Display:** 10.4 in. (264 mm) liquid-crystal TFT color display
6. **Acquisition System: Sampling Rate:** 2.5 GSa/s
7. **DC vertical gain accuracy:**
 $\pm 1.5\%$, derated at $0.10\%/^{\circ}\text{C}$ above 30°C
 $\pm 3.0\%$ for variable gain, derated $0.10\%/^{\circ}\text{C}$ above 30°C
8. **DC vertical offset accuracy:** $\pm(0.005 * |\text{offset} - \text{position}| + \text{DC Balance})$
- A. **Vertical System Digital Channels**
- B. 1. **Digital input channels:** 16 digital channels
2. **Thresholds:** TTL, CMOS, ECL, PECL, User-defined ($\pm 40\text{ V}$)
3. **Threshold accuracy:** $\pm[100\text{ mV} + 3\% \text{ of threshold setting}]$
4. **Maximum input voltage:**
1 M Ω 300 VRMS CAT II with peaks $\leq \pm 425\text{V}$
50 Ω 5 VRMS with peaks $\leq \pm 20\text{V}$
5. **Maximum input dynamic range:** 30Vp-p $\leq 200\text{MHz}$ 10Vp-p $> 200\text{MHz}$
6. **Minimum voltage swing:** 400mVp-p
7. **Input impedance:** 100 k Ω

Vertical System Digital Channels

Vertical System: Resolution: 8 bits

Trigger System: Modes: Auto, Normal and Single

Types: Edge, Sequence (B-trigger), Pulse width, Timeout, Runt, Logic, Setup and hold, Rise/Fall time, video, extended video(optional).

Serial Data Trigger (optional):

I²C, SPI, RS-232/422/485/UART, I²S, CAN, LIN, Ethernet.

Sensitivity: 1 mV/div to 4.98 mV/div: 1.8 div

5 mV/div to 9.98 mV/div: 0.6 div

10 mV/div to 19.98 mV/div: 1.2 div

$\leq 20\text{ mV/div}$: 0.5 div

Interface: USB 2.0 high-speed host port, USB 2.0 device port, LAN port, Video out port

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