



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

NIQ no. IITD/EE/PLN03-BEEN/IEC/2

Due Date: **11.09.2012, 5 PM**

**Notice inviting quotations for Calibrated Noise Source**

Sealed quotations are invited for a Calibrated Noise Source. The required specifications for the calibrated noise source 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.

**Required Specifications**

1. The noise source should be in a frequency range from 1 GHz to 50 GHz.
2. ENR range from 7 dB to 20 dB.
3. Nominal ENR of 15 dB.
4. Worst case ENR uncertainty of less than  $\pm 0.5$  dB.
5. ENR variation with temperature less than 0.01 dB per degree Celsius over the specified frequency range of the instrument.
6. VSWR should be less than 1.35 for frequencies less than 20 GHz, and less than 1.5 for frequencies less than 50 GHz.
7. Change in reflection coefficient between noise source ON and OFF states should be less than 0.1.
8. Operating temperature range of 0 to 50 degrees Celsius.
9. The noise output connector should be 2.4 mm .
10. The DC bias for the instrument should be provided through a BNC connector.
11. Detailed calibration data of the excess noise ratio (ENR) at different frequencies should be provided on a CD, along with the instrument.
12. Warranty and calibration support for one year should be provided.

## 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 Calibrated Noise Source”. The quote should reach the following address on or before **11.09.2012, 5 PM**.

Dr. S. Chatterjee  
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.
6. Complete set of manuals for the operation of the equipment should be given.
7. Clearly specify the installation requirements - such as space, power, frequency, environment etc.
8. If the item quoted is proprietary in nature, please enclose proprietary certificate from the principals stating, “Certified that \_\_\_\_\_ is a proprietary item of M/s \_\_\_\_\_ and no other manufacturer makes this item.”
9. Please attach a signed and stamped compliance chart for the specifications. The format of the compliance chart is attached to this document.
10. Please specify all of your terms and conditions clearly, including delivery period.
11. 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.
12. The Institute reserves the right to accept or reject any or all quotations without assigning any reasons thereof.

**Dr. S. Chatterjee**  
(Chairman, purchase committee)

## Compliance chart

	Parameter	Requirement	Model spec	Complies?
1	Frequency range	1 GHz to 50 GHz		
2	ENR range	7 dB to 20 dB		
3	Nominal ENR	15 dB		
4	Worst case ENR uncertainty	$< \pm 0.5$ dB		
5	Input impedance nominal VSWR	50 $\Omega$ $< 1.35$ for $< 20$ GHz $< 1.5$ for $< 50$ GHz		
6	Change in reflection coefficient	$< 0.1$		
7	Temperature range	0°C to 50°C		
8	Noise output connector	2.4 mm compatible		
9	Bias port	BNC		
10	Calibration data	provided on CD		
11	Warranty	1 year		