

Notice Inviting Quotation (NIQ)

June 2015

Name of the Equipment: DSP Lock In Amplifier

Quotations are invited from reputed manufacturer / their Indian representative for the **DSP Lock In Amplifier**

Specifications:

S No.	Feature	Specification	Compliance / Comments
1	General Description	1. Dual phase digital signal processing (DSP) LOCK IN AMPLIFIER.	
2	Signal channel	i) Both Single-ended and Differential voltage inputs must be possible. ii) Current input with 10^8 V/A must be possible. iii) Input impedance for voltage input should be $10M\Omega + 25$ pF, both AC and DC coupling should be possible. iv) Input noise more: $6\text{nv}/\sqrt{\text{Hz}}$ at 1kHz v) High Dynamic Reserve of 100 dB or better (without any prefilters) must be possible. vi) Gain accuracy should be $\pm 1\%$ with notch filter off vii) With harmonic distortion -80 dB.	
3	Reference Channel	The lock in must have a Reference Channel i) Frequency range 1 mHz to 100 kHz. ii) Reference Phase Resolution must be 0.01° or better. iii) Harmonic detection of up to 5 th Harmonic must be possible. iv) Phase drift should be less than $0.01^\circ/\text{C}$ below 10 kHz	
4	Internal Signal generator	The lock-in amplifier must have an internal sinusoidal signal generator with i) a Frequency range of at least 1mHz to 100 kHz with frequency resolution of 0.1 mHz. ii) amplitude in the range of 5 mVrms to 5 Vrms with a resolution of 2mV or better should be possible. iii) output impedance should be 50Ω . iv) sine wave output should be able to be phase-locked to an external reference	
5		i) sampling rate should be 256 k samples/s or	

	Inputs and Outputs	<p>better.</p> <p>ii) Both amplitude and phase (X,Y, R, θ) data must be supplied.</p> <p>iii) Minimum of three auxiliary A/D inputs with at least 1 mV resolution and $\pm 10V$ full scale must be available for user defined measurements.</p> <p>iv) Minimum of three auxiliary D/A outputs with at least 1 mV resolution and $\pm 10V$ full scale must be available for user defined measurements.</p> <p>v) Output data should be provided in ASCII format.</p>	
6	Demodulator	<p>i) Time constant should have a range of 10 μs to 10 ks</p> <p>ii) Harmonic rejection -80 dB</p>	
7	Displays	<p>i) Dual Display (amplitude and phase) must be possible</p> <p>ii) Numeric readout should be possible</p> <p>iii) Offset of X, Y and R upto 100% of full scale should be possible.</p>	
8	Interface	<p>i) GPIB as well RS232 must be possible.</p> <p>ii) A minimum of 1.5 meter long GPIB cable must be supplied.</p> <p>iii) A USB-GPIB adaptor must be supplied.</p>	
9	Optional	Optical Chopper with controller: 4 to 300 Hz , Pot for frequency control, with 1Hz resolution and accuracy	
10	Maintenance support	<p>i) On-site warranty of 3 years from the date of purchase should be provided.</p> <p>ii) In addition, an AMC support for 1 year after warranty should also be provided for which bidder should mention its AMC charge per year separately. (The AMC charge will not be counted towards financial evaluation).</p>	

TERMS AND CONDITIONS COVERING SUBMISSION OF QUOTATIONS, IIT Delhi

1. Method of Submission of Quotations	<p>1. Quotations should be sent in a sealed cover and marked at the top “our NIQ reference, due date for opening, the name of the item etc.” The quotation must be in 2 separate sealed cover marked: “Technical Bid” and “Price Bid”</p> <p>2. The quotations should reach Dr. Samaresh Das Centre for Applied Research in Electronics, IIT Delhi, Hauz Khas, New Delhi 110016</p>
2. Local Offices	Firms located outside Delhi having their local Branch Office at Delhi will supply the material through their Delhi Office
3. Taxes	No Sales tax concession under Form “C” and “D” is admissible to this Institute.
4. Validity of Quotation	The validity of the quotations must be for three months or more
5. Delivery and rate	The rates should be quoted in FOB and CIF (inclusive of freight, insurance), taxes, duty etc. as applicable.
6. Institute Rights	The Institute reserves the right to accept or reject any or all quotations without assigning any reason. The discretion of increasing or decreasing of the quantity demanded or selecting only one items out of all quoted also vests with the Institute.
7. Terms of Payment	<p>Our normal term of Payment is by (i) Letter of Credit for Foreign Suppliers (ii) for Indian Suppliers, by cheque within 30 days after receipt of goods/material in sound condition. Please note that advance payment will not be made.</p> <p>State clearly the Name and address of the Supplier to whom the order will be placed. Also mention the “Cheque/Draft to be made in favour of and payable at ...(City/Country).”</p>
8. Rejection	Late receipt of quotation and the same not conforming to the set procedures as above will be rejected
9. Discount / Rebate	Special discount/rebate wherever admissible keeping in view that the supplies are being made for educational purpose in respect of Public Institution of National importance may please also be indicated.
10. Warranty /Compliance/ Certificate of meeting specifications	To be clearly mentioned / provided by the Supplier.
11. Manufacturer’s name and full address and country of manufacturing	Must be provided
12. Certification of registration for sales agent	Must be provided

