16

विज्ञान ब्रह्म

श्री माता वैष्णो देवी विश्वविद्यालय

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NIQ. No: SMVDU/SoECE/ 2024-25/ 515

Date: 4th September2024

Notice Inviting Quotation

Sub: - Supply for Delta, Adaptive Delta, Sigma Delta Modulator & Demodulator Trainer Kits

Quotations in sealed cover are invited for the Supply on behalf of Registrar SMVDU for the Head of the School of Electronics and Communication Engineering from reputed registered firms / Co-operative stores / Suppliers or Manufacturers having a valid GST Number and PAN Number, and for supplying rates for the bellow mentioned items/jobs.

Sr. No.	Details of the Item / job	Qty
1.	**Supply for Delta, Adaptive Delta, Sigma Delta Modulator & Demodulator** **Detailed description in attached Annexure F**	05

The sealed rate quotations should reach the Central Dispatch Section SMVDU latest by 16/0900/2024 Monday, by 5:00 P.M... Any quotation received after the due date and time shall be summarily rejected. The sealed bids shall be opened on the next working day at 2:30 P.M. in the presence of authorized representatives, should they wish to attend the same.

Terms & Conditions

1. Rates should be written in figures as well as words. Delivery duration, GST rates, Delivery charges, or any other rates/charges, as applicable, and discount if any, should be clearly mentioned in the **Schedule of Quantities [Format enclosed at Annexure 'A'].**
2. The last date for receipt of sealed quotations in the Central Dispatch Section SMVDU latest by 16/0900/2024 Monday, by 5:00 P.M
3. The quotation / **Schedule of Quantities** should be on the letter head of the Company with reference no. and date on it, duly signed and stamped. The quotations should be submitted in sealed cover, addressed to the Head of School/Section, super-scribing the NIQ issue number & date and due date & time failing which the quotation is liable to be rejected.
4. Price quoted for the material / equipment shall be final and valid for 3 months.
5. Quotation without the authorization from the Company will not be accepted.
6. Delivery of material /equipment / stores mentioned in this quotation will be supplied by the supplier at SMVDU Stores at Kakryal, Katra-182320 (J&K) within the four weeks after receiving the confirm purchase order.

7. Rate offered must be for metric system of unit lengths or volume or weight.
8. Documents in support of valid GST and PAN Number also need to be enclosed with the quotation.
9. SMVDU reserves the right to increase the quantity mentioned in this NIQ or to split this quotation and place order on one or more suppliers/ bidders; as well as, the right to reject partly or completely, the quotations without assigning any reasons thereof.
10. The quotation should be complete in all respects and the firms shall give the Make/ Brand name offered for the items in the quotations. Wherever applicable, technical literature may please be enclosed along with quotation.
11. The payment will be released after the receipt of all and complete material/equipment with complete accessories in good working condition and its inspection by a duly constituted Inspection Committee.
12. Material/ equipment shall be guaranteed for the minimum period of 01 / 02 / 03 [strike off whichever is not applicable] years on site for satisfactory performance, workmanship and for the quality of material/ equipment supplied by the firm from the date of delivery/ installation.
13. Quotation received after DUE DATE & TIME will not be considered. SMVDU shall not be responsible for delays in postal transit.
14. All taxes / duties should be clearly mentioned in the Quotation.
15. PACKING: The equipments shall be packed suitably for dispatch directly to SMVDU at Suppliers expenses and supplier shall be responsible for any damage during transit.
16. AFTER SALES SERVICE: The offer shall clearly state full details of the after sales service facility available for the equipment.
17. JURISDICTIONS FOR DISPUTES: In all disputes, the decision of the Registrar, SMVDU, shall be final, conclusive and binding on the supplier. All dispues shall be subject to the jurisdiction of the courts in the District, Jammu.
18. DEVIATIONS: Deviations, if any from the specifications given which provide for improvement in the functioning of the equipments will be accepted. Such deviations and their advantages shall be clearly brought out in the tender / quotation.

The NIQ shall be available on the University Website: www.smvdu.ac.in For any query contact School/Section/Centre/Wing at the following email id: atulneel.sharma@smvdu.ac.in

Signatures:.....
Head of SCEE
Date: 04/05/24

(14)

Annexure "A"

[To be provided on Firm/Company Letter Head]

Schedule of Quantities

Name of the Job: Supply for Delta, Adaptive Delta, Sigma Delta Modulator & Demodulator Trainer Kits

Ref: NIQ Number:..... Date: .....

Sr. No.	Details of the Item	Qty	Rate per item	Amount in Rs.	GST rate	GST Amount in Rs.	Total Amount inclusive of GST in Rs.
1							
2							
3							
4							
	Less: Discount if any						
	Add: Delivery Charges if any						
	Net Amount to be paid in Rs.						
	Deliver Period						

Additional Terms and Conditions [if any]:

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.....

Bank details for RTGS Transfer

Name of the Account:
Account No.:
Account Type:
Bank Name:
Branch name and Address:
IFSC Code:

Signature & Stamp of the Supplier

ANNEXURE F

Technical Specifications for Delta, Adaptive Delta, Sigma Delta Modulator & Demodulator

Modulation & Demodulation Techniques: Delta, Adaptive Delta, Sigma Delta First order, Sigma Delta Second order **Internal Signal Generator:** Direct Digital Synthesizer, Types of Signals: Sine, Square, Triangle, Arbitrary signals, Frequency: 500Hz, 1 KHz, 2 KHz, 3 KHz, **External Signal:** Types of Signals: Sine, Square, Triangle, Arbitrary signals **Maximum Input Voltage:** 3Vpp (Max.) +1.5V DC offset, Frequency: 500Hz to 3.5 KHz

Transmission Effect: Attenuation (7dB & 10dB). **Crystal Frequency:** 8MHz, **Sampling Frequencies:** 16KHz, 32KHz, 64KHz, 128KHz, 256KHz.**Integrator step** : Normal & 3 times, **Selection Mode** : Push switches. **Low Pass Filter:** Cut-off frequency-5KHz, **Digital Filter** : Decimation filter (16:1)

Delta Modulator & Demodulator Study and analysis of: • Delta Modulation and Demodulation. • Sample & Hold output by varying the Sampling as well as Signal frequency. • Integrator output at the Modulator by varying the Sampling frequency. • Improved Integrator output by varying the gain control frequency. • Slope Overload distortion problem. • Granular Noise problem. • Single bit Delta modulated PCM output. • Integrator output at the Demodulator. • Analyze the final Delta demodulated output with Second order Low Pass Butterworth filter.

Adaptive Delta Modulator & Demodulator Adaptive Delta Modulation. Single bit PCM output by varying the Sampling frequency. Variable step register at the Modulator side. Accumulator and Add/Subtract at the Modulator side. Accumulator and Add/Subtract at the Demodulator side. Overcoming of Slope Overload distortion occurred in Delta Modulation by the generation of variable step size. Analyze the final Adaptive Delta demodulated output with Second order Low Pass Butterworth filter.

Sigma Delta First Order • Sigma Delta Modulation of the First order. • Sigma output after the summation of two signals. • Integrator output by varying the Sampling frequency. • Single bit PCM output at the Sigma Delta Modulator. • Sigma Delta Demodulation of First order. • Decimator filter output at the Demodulator by varying the position of the clock enable switch. • Analyze the final Sigma Delta Demodulation output with Second order Low Pass Butterworth filter at the given test point.

Sigma Delta Second Order • Sigma Delta Modulation of Second order. • First order Sigma output. • Second order Sigma output. • Integrator output by varying the Sampling frequency. • Single bit PCM output at the Sigma Delta. • Sigma Delta Demodulation of Second order. • Decimator filter output at the Demodulator by varying the position of the clock enable switch. • Analyze the final Sigma Delta Demodulation of Second order output with Second order Low Pass Butterworth filter.

Transmission effects.• Attenuator effect.• Filter effect.• Noise effect by varying the noise level.

Teaching & Simulation software should also be provided with kit which should cover all topics and all essential accessories.

Included accessories Patch cord for connection. Mains cord: 1 no., Power Supply: 1 no,

Hard copy of technical/operating/experimental manual. 01 no's each

BNC to BNC probe 01 no's

BNC to Test Probe (crocodile) 01 no's