(59)

Institute of Engineering & Technology, Lucknow,Sitapur Road, Lucknow, Uttar Pradesh - 226021

INVITATION LETTER

IET/TEQIP-III/2019-229-I

Package Code: TEQIP-III/2019/UP/ietl/281
Package Name: IET-TEQIP-ECD-LAB-9

Current Date: 05-Jul-2019
Method: Shopping Goods

Sub: INVITATION LETTER FOR IET-TEQIP-ECD-LAB-9

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	TDM-PAM TRANSMITTER AND RECEIVER	2	Institute of Engineering and Technology, Lucknow	
2	DATA FORMATTING & CARRIER MODULATION TRANSMITTER	2	Institute of Engineering and Technology, Lucknow	
3	CARRIER DEMODULATION & DATA REFORMATTING RECEIVER	2	Institute of Engineering and Technology, Lucknow	
4	Four Channel TDM-PCM Transmitter & Receiver	2	Institute of Engineering and Technology, Lucknow	
5	Understanding MSK, GMSK, FSK, GFSK, Modulator and Demodulator with AWGN Channel Noise and BER	2	Institute of Engineering and Technology, Lucknow	

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3. **Quotation**

3.1 The contract shall be for the full quantity as described above.

3.2 Corrections, if any, shall be made by crossing out, initialling, dating and re writing.

3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit Price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **60**days after the last date of quotation submission.

6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which

6.1 are properly signed; and

6.2 Confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.

8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be Incorporated in the purchase order.

9. Payment shall be made in Indian Rupees as follows:

Satisfactory Delivery & Installation and Acceptance - 100% of total cost

10. Liquidated Damages will be applied as per the below:
Liquidated Damages Per Day Min % :0.50
Liquidated Damages Max % : 10

11. All supplied items are under warranty of **36** months from the date of successful acceptance of items and AMC/Others is .

12. You are requested to provide your offer latest by **14:00** hours on **22-Jul-2019.**

13. Detailed specifications of the items are at Annexure I.

14. Training Clause (if any) **YES**

15. Testing/Installation Clause (if any) **YES**

16. Performance Security shall be applicable: **5%**

17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.

18. Sealed quotation to be submitted/ delivered at the address mentioned below, **TEQIP-III Institute of Engineering & Technology, Lucknow,Sitapur Road, Lucknow, Uttar Pradesh - 226021**

19. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)
Name & Designation

COORDINATOR
TEQIP PHASE-III
Institute of Engineering &
Technology, Lucknow-21

Annexure I

Sr. No	Item Name	Specifications
1	TDM-PAM TRANSMITTER AND RECEIVER	Crystal Frequency : 8 MHz, Analog Input Channels : 4 channels, Multiplexing : Time Division Multiplexing, Modulation : Pulse Amplitude Modulation, On Board Analog Signal : 500 Hz, 1 KHz, 2 KHz and 4 KHz,(Sine wave synchronized to sampling pulse) Adjustable amplitude and separate variable DClevel, Sampling Rate : Four sampling signals 32, 40, 50 & 80 KHz/ channel (switch selectable),Sampling Pulse : With duty cycle variable from 0-90% in decade steps. Clock Regen. at Receiver: Using PLL Test points : 55 nos. Interconnections : 2 mm Sockets, Mains Supply : 110-220V, 50Hz/60 Hz, Dimensions (mm) : W 326 x D 252 x H 52, Operating Conditions : 0-40 C, 85% RH, Included Accessories 2mm Patch cord 16"-10 nos. Tech Book Power Supply - 1 no Mains cord - 1 no.
2	DATA FORMATTING & CARRIER MODULATION TRANSMITTER	Crystal Frequency : 4.096 MHz Data formats : NRZ (L), NRZ (M), RZ, AMI, RB, Biphase (Manchester), Biphase (Mark).Carrier modulation : ASK, FSK, PSK, DPSK, QPSK On-board carrier : Sine waves synchronized to transmitted data at 1.6 MHz,960 KHz, (0 deg. phase) 960 KHz, (90 deg. phase) Test Points : 43 nos Power Supply : 110-220V, 50/60 Hz. Power Consumption : 4VA (approximately) Interconnections : 2 mm sockets Product Tutorials : Online (Theory, procedure, reference results, etc)Dimensions (mm) : W 326 x D 252 x H 52 o Operating Conditions: 0-40 C, 85% RH Included Accessories 2mm Patch Cord 16" : 30 nos. 2mm Patch Cord 32" : 4 nos. Mains Cord& Tech Book Power Supply:1 no.
3	CARRIER DEMODULATION & DATA REFORMATTING RECEIVER	Input : Carrier Demodulation : ASK – Diode Detector FSK – PLL Detector PSK – Square Loop Detector QPSK – Fourth Power Loop Detector Power Consumption : 6 VA (approximately) Test Points : 39 nos Interconnections : 2 mm Sockets Power Supply : 110-220V, 50/60 Hz Product Tutorials : Online (Theory, procedure, reference results, etc) Dimensions (mm) : W 326 x D 252 x H 52 Operating Conditions : 0-40 C, 85% RH Included Accessories Patch cord 16" : 30 nos. Patch cord 32" : 4 nos. Tech Book Power Supply & Mains Cord : 1 no.
4	Four Channel TDM-PCM Transmitter & Receiver	Modulation & Demodulation Techniques: Two channel TDM-PCM, Four channel TDM-PCM. Internal Signal Generator: Four dedicated Direct Digital Synthesizer Generators for each Channel. Types of Signal: Sine, Triangle, Arbitrary signal. Frequency: 500Hz, 1KHz, 1.5KHz, 2KHz, 3KHz. SMD LED Indicators: 54 nos. for DDS signal selection DDS signal frequency selection, Sampling selection, Technique selection Interconnect path Crystal Frequency: 8MHz. Sampling Frequencies: 8KHz, 16KHz, 32KHz. TDM techniques based on: Bell lab system. Selection Mode: Push switches Number of Test Points: 40 nos. Low Pass Filter: 4nos. Cut-off frequency-5KHz. Power Supply: 110V - 260V AC, 50/60Hz. Operating Conditions: 0-40 C, 85% RH. Included accessory 2mm Patch cord - 2nos.
5	Understanding MSK, GMSK, FSK, GFSK, Modulator and Demodulator with AWGN	Modulations: Continuous Phase FSK (CPFSK), Minimum Shift Keying (MSK), Gaussian Frequency Shift Keying (GFSK), Gaussian Minimum Shift Keying (GMSK) etc. Software

	Channel Noise and BER	programmable data rate up to 10 /20/30 10Mbps. Software programmable 2, 4, 8 array FSK. Software programmable modulation index h (0 to 10) On-board digital data pattern generator as a test pattern Gaussian Filter BT product is BT= 0.3. Built in real-time data acquisition system with time domain signal analysis. Additive White Gaussian Noise with Normal distribution up to 4.5 times the standard deviation using Box-Muller algorithm. Two channel Additive White Gaussian Noise Generator with 10 bits/sample/channel I & Q Channel DACs-10 bit@ Sampling rate 125 MSPS maximum Anti aliasing low pass filter with 3dB bandwidth of I & Q channel filter: Sallen Key 6-pole Butterworth with cut-off frequency 13MHz. BER measurement using actual bit errors with a known digital data test sequence at the transmitter end More than 10nos. of test points and 2 BNC connector for analysis using external Oscilloscope & Spectrum Analyzer Mains Supply : 110-220 V AC, 50/60Hz Operating Conditions : 0-40 C, 80% RH. Included Accessories: Power Supply: 1 no. Patch cord: 2 nos. Host to Device USB cable: 2 no. BNC to BNC cable: 4 nos. Power cord: 1 no.

FORMAT FOR QUOTATION SUBMISSION
(In letterhead of the supplier with seal)

Date: _____

To:_____
_____

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (Rupees _____amount in words) within the period specified in the Invitation for Quotations.
We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.
We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier
Name: _____
Address: _____
Contact No. _____