

**MAHATMA GANDHI UNIVERSITY
NALGONDA**

website: www.mguniversity.ac.in

No. 01/MGU/NLG/2016-17

Dated : 09.10.2016

e-PROCUREMENT TENDER NOTICE
FOR PROCUREMENT OF LAB EQUIPMENTS OF
ENGINEERING DEPARTMENTS

Important Dates

Date of release of Tender through e- procurement	:	11.10.2016
Last date & time for submission of bid	:	29.10.2016 at 02:00 pm
Date & time for opening of technical bid	:	29.10.2016 at 03:00 pm
Date & time for opening of financial bid	:	09.11.2016 at 1:00 pm

Online tenders are invited under Two-Bid system through e-Procurement System from the reputed registered manufacturers or their authorized dealers/agencies or reputed suppliers having capacity to provide the **Lab Equipments for Electrical and Electronic (EEE) & Electronics & Communication Engineering(ECE) Departments** at Mahatma Gandhi University, Nalgonda as per the technical specifications & required quantity (as mentioned in Annexure-I and Annexure-II) , and as per Terms & Conditions of the Contract and through e-tendering procurement process.

REGISTRAR

TECHNICAL BID FORMAT

Dept. of ECE : Micro Wave Engineering Lab

S. No.	MODEL NO.	ITEM DESCRIPTION	Qty No's
ece1.	Klystron	Basic Microwave Bench (Klystron): Characteristics of Reflex Klystron oscillator, finding the mode numbers and efficiencies of different modes.	01
		Basic Microwave Bench (Klystron) consist of : <ul style="list-style-type: none"> a) Klystron Power Supply Specifications: Beam voltage - 220 to 450 v Beam current - 50 ma Operating voltage - 300 V (Appx.) Replier Supply - 5 to 250 Volts (Negative W.R.T. Cathode) b) Klystron Mount c) Klystron Tube d) Isolator e) Detector Mount f) BNC to BNC Cable -2 nos g) Waveguide Stand – 3 Nos h) Cooling Fan with Stand 	
ece 2.	GUNN	Gunn Diode based Microwave Trainer: Characteristics of Gunn diode oscillator, Power Output Vs Frequency, Power Output Vs Bias Voltage.	02
		Gunn Diode based Microwave Trainer Consist of : <ul style="list-style-type: none"> a) Digital Gunn Power Supply Specifications: Gunn bias voltage - .5 to 12 V Current - 0 to 1.5 A (Max) b) Gunn Oscillator c) Pin Diode Modulator d) Isolator e) Wave guide matched detector mount f) BNC-BNC cables – 3 Nos g) Wave guide stand – 2 Nos 	
ece 3.	Klystron	Basic Microwave Bench (Klystron): Measurement of frequency and Guide wavelength calculation: Verification of the relation between Guide wavelength, free space wavelength and cutoff wavelength of X- band rectangular waveguide. Measurement of low and high VSWRs: VSWR of different components like matched terminals, capacitive and inductive windows, slide screw tuner for different heights of the tuning posts etc.	01
		Basic Microwave Bench (Klystron) consist of :	

		<p>a) Klystron Power Supply Specifications: Beam voltage - 220 to 450 v Beam current - 50 ma Operating voltage - 300 V (Appx.) Reppler Supply - 5 to 250 Volts (Negative W.R.T. Cathode)</p> <p>i) Klystron Mount j) Klystron Tube k) Isolator l) Detector Mount m) BNC to BNC Cable -2 nos n) Waveguide Stand – 3 Nos o) Cooling Fan with Stand</p>	
	Klystron/ Gunn Add on	<p>Add on module to upgrade Klystron and Gunn to advance configuration</p>	02
		<p>a) Frequency Meter, Direct Reading b) Slotted Section c) Tunable Probe d) Shorting Plate e) Movable Short f) Matched Termination g) VSWR Meter, Solid State Specifications: Frequency - 1000 Hz Sensitivity - 0.1 Microvolt at 200 ohms for full scale Band width - 25 to 30 hz Range - 60 db min. in 10 db scale h) Slide Screw Tuner i) Waveguide Stand – 2Nos j) Variable attenuator</p>	
ece 4.	Klystron	<p>Basic Microwave Bench (Klystron):</p> <p>Verification of the relation between Guide wavelength, free space wavelength and cutoff wavelength of X- band rectangular waveguide.</p>	01
		Measurement of impedance	
		Directional coupler.	
		Tees: E plane, H plane and Magic Tee.	
		Circulator	
		Basic Microwave Bench (Klystron) consist of :	
		<p>p) Klystron Power Supply Specifications: Beam voltage - 220 to 450 v Beam current - 50 ma Operating voltage - 300 V (Appx.) Reppler Supply - 5 to 250 Volts (Negative W.R.T. Cathode)</p> <p>q) Klystron Mount r) Klystron Tube s) Isolator t) Detector Mount u) BNC to BNC Cable -2 nos v) Waveguide Stand – 3 Nos</p>	

		w) Cooling Fan with Stand	
	Passive	Components for Passive	01
		a) Magic Tee, b) Directional Couplers, c) Attenuators, d) Circulators e) E-Plane/H-Plane Tee.	
	PHASE	Components for Phase	01
		a) Waveguide phase shifter b) Waveguide cavity c) Movable short	
ece 5.	Klystron	Basic Microwave Bench (Klystron): Measurement of radiation patterns for basic microwave antennas like horn and parabolic reflectors in E-plane and H-plane. Also to finding the gain, bandwidth and beam width these antennas.	01
		Basic Microwave Bench (Klystron) consist of :	
		x) Klystron Power Supply Specifications: Beam voltage - 220 to 450 v Beam current - 50 ma Operating voltage - 300 V (Appx.) Replier Supply - 5 to 250 Volts (Negative W.R.T. Cathode) y) Klystron Mount z) Klystron Tube aa) Isolator bb) Detector Mount cc) BNC to BNC Cable -2 nos dd) Waveguide Stand – 3 Nos ee) Cooling Fan with Stand	
	ANTENNA	Components for Polar Pattern and Gain Charactristics of Horn Antennas	01
ece 6.	AMA	Advanced Motorized Antenna Trainer Study of various antennas like dipoles, loops, Yagi antenna, log periodic antenna and their radiation pattern.	
		Advanced Motorized Antenna Trainer Consisting of PLL Synthesized RF Source and Detector Module (100MHz-3 GHz) Transmitter and Receiver Stand with Stepper Motor and Base Plate Universal Plug and Fix Antenna Mounts Antennas quantity of 22Nos. Specifications: 1. The Antenna Measurement System should have the facility to be controlled, set parameters and acquire data from the system through PC interface using LABVIEW. 2. The System should also be able to work in the Stand alone mode using Membrane Key pad and 128x64 Graphic LCD Display with backlit 3. The Controller should be designed using ARM processor. 4. The Transmitter and Motorized Receiver Stand	01

should be made of special material which is inert to EM frequency and should have engraved height and angle scale on it with spirit level at the base.

5. Universal plug and fix Antenna mounts should be provided to hold the all types of antenna assembly in vertical and horizontal orientation for co and cross polarization.
6. Stepper Motor provided with the system for rotation of Antenna should have minimum 2Kg torque and minimum Step Angle of 1.8 Degree.
7. The Frequency of the RF Source should be PLL Synthesized and should generate 100MHz to 3GHz.
8. The Source should have the facility to program the Frequency with a resolution of 1MHz
9. The RF Detector should be a Logarithmic Detector with Frequency range of 100MHz to 8 GHz.
10. The Radiation pattern of the Antenna under test should be plotted on the PC Screen in Cartesian and Polar Graph.
11. Horizontal and Vertical Markers to be provided for measurements like Antenna Gain, FBR , Antenna Resolution, HPBW, BWFN
12. Built in Experimental Set-up to be embedded inside the controller
13. The same system should be able to demonstrate and measure various parameters of the Wired Antenna, Microstrip Antenna, Aperture Antenna, Array Antenna and Reflector Antenna.

List of Antennas to be supplied :

ONE SET WIRE ANTENNA

1. Monopole Plane base ground
2. Monopole-wire
3. Dipole-wire
4. Yagi
5. Folded Dipole
6. Vee dipole
7. Rectangular loop
8. Helical

MICROSTRIP ANTENNA

1. Planar Dipole
2. Planar Monopole
3. RMSA- Circular Polarized
4. CMSA
5. TMSA
6. 2X1 ARRAY
7. Annular ring
8. Chip Antenna
9. RMSA

APERTURE ANTENNA

1. E- Horn
2. Open ended Waveguide Rectangular

ARRAY ANTENNA

1. Broadside Array

		2. Collinear Array REFLECTOR ANTENNA 1. Paraboloid Corner reflector	
ece 07.	DSO	100MHz 1GS/s with FFT Color Digital Storage Oscilloscope Specifications: Bandwidth: DC-100MHz Waveform Storage : 10 Waform & 10 Setup Automatic Measurements and USB Interface.	01
ece 08.	FM	Frequency Meter, Direct Reading	01
ece 09.	MT	Matched Termination	02

ANNEX URE-II

FINANCIAL BID FORMAT

#	Name of Lab Equipment with Description/Specification	Qty. Reqd.	Unit	Unit Rate (inclusive of all duty / taxes including VAT)	Total Unit Rate
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10					

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INFORMATION SUPPORTING CAPACITY / CREDIBILITY

1. The bidder should have Digital Signatures so as to enable him to submit his/her bids online through e-tendering.
2. The bidder should be manufacturer/authorized dealer of a manufacturer. He is required to furnish Performance Certificate for the last three years showing turnover of the category of the items for which bid is submitted.
3. The bidder has to produce the proof of supplying the similar items in preceding 3 years to the Technical/Teaching/Research Institution of well known high standard Institutions and other Laboratories etc.
4. The bidder must furnish details of their best/reputed 10-15 customers with full address, telephone number etc.
5. The bidder must furnish details of some supplies of relevant equipments made, like name of the equipments, order number, cost and date of supply etc. during the last financial year.
6. If the bidder is manufacturer, he/she must furnish details of its organization, stating the number of personnel employed, manufacturing facilities, after sales service facilities and quality control systems.
7. If the bidder is authorized dealer, he/she must furnish details of its organization, stating the number of personnel employed, tie-ups for after sales service facilities.
8. All the quoted items/equipments should be of standard make.

REGISTRAR
Mahatma Gandhi University,
Nalgonda

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GUIDELINES/PROCEDURE TO BE FOLLOWED IN INTRODUCTION OF
e- PROCUREMENT SOLUTION

1. Payment Of Cost Of Tender Documents:- The Tender document can be downloaded from website on payment of Rs.1000/- (Rupees one thousand only) in the form of crossed Demand Draft on any Nationalized Bank drawn in favour of the Registrar, Mahatma Gandhi University, Nalgonda payable at Nalgonda .
Photo copy of the DD is to be scanned and uploaded along with the bid, and the original DD shall be sent to Registrar, Mahatma Gandhi University, Nalgonda,
2. Tender fee once paid is neither refundable, transferable nor adjustable for other tenders. The tender form is non-transferable and should be purchase in the exclusive name of the party who has to actually submit the offer.
3. Submission Of Bids:- The bidders who are desirous of participating in „e“-procurement shall submit their price bids in the standard formats prescribed in the Tender documents , displayed at e-procurement.gov.in The bidder should upload the scanned copies of all the relevant certificates, documents etc. at e-procurement.gov.in in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity.
3. Payment Of Bid Security (Earnest Money Deposit):- The EMD has been shown in the e-procurement Tender Notice. The EMD shall be in the form of the Demand Draft/Pay order of Nationalized Bank/Fixed Deposit Receipt of a Nationalized Bank issued in favour of Registrar, Mahatma Gandhi University.

Zerox/Photo copy of the DD/PO/FDR is to be scanned and uploaded along with the bid, and the original DD/PO/FDR shall be sent to Registrar, so as to reach before the date of closing of the bids. Failure to furnish the original DD/PO/FDR before the closing of the bid will entail rejection of bid.

4. Price Bid Opening:- The Price Bids will be opened online by the concerned officer /officers at the specified date & time and the result will be displayed on the e-procurement.gov.in, which can be seen by all the bidders who participated in the tenders. If any of the date earmarked for opening of technical or financial bids happens to be holiday, the bids will be opened on the very next working day.
5. Processing Of Tenders:- The concerned officer/officers will evaluate and process the tenders as done in the conventional tenders and the documents will be communicate to the bidder online.
6. Payment Of Performance Guarantee:- The successful bidder shall furnish a FDR of the value of 10% of the cost of the item. In case the performance of the item is not found satisfactory, the performance security will be forfeited.
7. Participation Financial Rules For E-Procurement:- The e-procurement system would be applicable for purchase of goods, outsourcing of services and execution of work as prescribed in General Financial Rules.
8. Clarification/Assistance: -For any query/clarification in respect of Technical aspect of the enquiry contact email: registrar_mgu@yahoo.com

Sd/-
REGISTRAR