

O/C

# GOVERNMENT COLLEGE OF ENGINEERING, KARAD

(An autonomous institute of Govt. of Maharashtra)

VIDYANAGAR, KARAD, 415124 DIST SATARA

Phone – ( 02164 ) 326632, 272414/15 Fax No. – ( 02164 )271713

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TEQIP-II/MH/MH1G01/385 4224  
ETC-AVE-P1-VNA

Date-11/11/2016

## INVITATION FOR QUOTATIONS FOR SUPPLY OF GOODS UNDER SHOPPING PROCEDURES

To,

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sub: Invitation for Quotations for Supply of Two -port Vector Network Analyzer

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods: -

Brief Description of the Goods	Specifications*	Quantity	Delivery Period	Place of Delivery	Installation Requirement if any
Two-port Vector Network Analyzer	Vector Network Analyzer with different modules like Vector Signal Generation, Reception, demodulation and digitization, Reference local oscillator, System Automation, Timing and Synchronization, Communication and Control, Reflection Measurement, VSWR Measurement, Slave controller	1	3 week from date of PO	Govt. college of Engineering, Karad E&TC dept. Vidyanagar, Tal:Karad Dist:Satara Pin:415124	Yes( at Dept.of E&TC)

\* Where ISI certification marked goods are available in market, procurement should generally be limited to goods with those or equivalent marking only.

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 II** 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, initialing, 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 **55** 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:  
**Delivery and Installation - 90% of total cost**  
**Satisfactory Acceptance - 10% of total cost**
10. All supplied items are under warranty of **36** months from the date of successful acceptance of items.
11. You are requested to provide your offer latest by **17:00** hours on **25<sup>th</sup> November 2016** .
12. Format for application is specified in **Annexure-I**.
13. Training Clause (if any) **one day training for teaching staff members in ETC Department at Govt. College of Engg.Karad**
14. Testing/Installation Clause (if any) **Installation & Demonstration of equipment in ETC Department at Govt . College of Engg Karad**

15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,
17. We look forward to receiving your quotation and thank you for your interest in this project.

Shree  
Dept.  
Procurement  
Co-ordinator

Atul  
ab-charge

Mavali  
Head of the Department

Asuli  
Modal Procurement  
Co-ordinator



G. J.  
(Purchaser)  
Name: Principal,  
Govt. College of Engineering Karad  
Address: Vidyanagar, Karad 415124  
Tel. No. 02164 271711/ 272414/ 272415  
Fax No. 02164 271713

*Annexure-I*

**Specifications of Two -Port Vector Network Analyzer**

S. No.	Parameter	Specifications
1	No. of Test Port	2
2	Frequency Range	9 KHz to 4.5 GHz
3	Frequency stability Aging Rate	±0.05 ppm ±0.5 ppm/year (high stability time base required)
4	Frequency Resolution	1 Hz
5	IF Bandwidth	10 Hz to 1.5 MHz
6	Dynamic range with IFBW = 10 Hz	≥ 123 dB @ 10 MHz ≥ 123 dB @ 4.5 GHz
7	Directivity	≥ 49 dB @ 10 MHz ≥ 46 dB @ 3 GHz ≥ 40 dB @ 4.5 GHz
8	Source Match	≥ 40 dB @ 10 MHz ≥ 40 dB @ 3 GHz ≥ 36 dB @ 4.5 GHz
9	Load Match	≥ 49 dB @ 10 MHz ≥ 46 dB @ 3 GHz ≥ 40 dB @ 4.5 GHz
10	Reflection Tracking	± 0.011 dB @ 10 MHz ± 0.021 dB @ 3 GHz ± 0.032 dB @ 4.5 GHz
11	Transmission Tracking	± 0.015 dB @ 10 MHz ± 0.018 dB @ 3 GHz ± 0.056 dB @ 4.5 GHz
12	Crosstalk	≤ -110 dB @ 10 MHz ≤ -120 dB @ 3 GHz ≤ -110 dB @ 4.5 GHz
13	Trace Noise at IFBW = 70KHz	4mdB rms @ 10 MHz 4mdB rms @ 3GHz 6mdB rms @ 4.5GHz
14	Trace Stability	0.005 dB/°C @ 10 MHz 0.005 dB/°C @ 3GHz 0.01 dB/°C @ 4.5GHz
15	Maximum Test Port Output Power	≥ +10 dBm for Full frequency range
16	Minimum Test Port Output Power	≤ -55 dBm for full frequency range
17	Noise Level at 4.5 GHz	≤ -123 dBm/Hz
18	Cycle time for 201 points, 2 port-cal., 200MHz Span , 500KHz IFBW	9 msec
19	Test port Connector Test port Impedance	Type-N (female) 50 Ω
20	Input damage level	≥ +26 dBm; ±35 VDC
21	Measurements	VNA should Full true 2-port s-parameter measurement Capability

22	Time Domain Measurement capability	VNA Should have inbuilt facility for reflection and transmission responses measurement in the time domain.
23	Measurements Display Format	Log magnitude, Linear magnitude, VSWR, Polar, Delay, Phase, Real, Imaginary, Smith chart
24	Sweep Types	Frequency sweep both forward & reverse Power sweep both forward and reverse Arbitrary Segment Sweep
25	Analysis Features in VNA	Fixture simulator for Mixed-mode S-parameter measurements, Embedding and de-embedding, Matching circuit simulation, Port impedance conversion, Equation editor, Statistical Analysis, Limit Lines
26	Calibration Types Supported	SOLT, TRL, Adapter removal/insertion, Unknown thru, ECal, User characterized ECal
27	LXI Compliance	VNA should be LXI Class C compliant
28	Interfaces	USB Type A, USB 2.0 Type B, LAN 1000BaseT, GPIB, VGA
29	Power Requirement	240 V (AC) with tolerance $\pm 10\%$ , 50 Hz
30	In-built CPU	Windows 7 OS
31	Test Accessories	Vendor should optionally provide quote for following test accessories. 1.) Compatible 2 port Mechanical kit 2.) 2 nos. of flexible phase-stable test port cables
32	Upgradability	1.) VNA should be upgradable to 20 GHz 2.) VNA should be upgradable for material measurement capabilities to measure measuring complex permittivity and permeability of various materials with suitable probes and software. 3.) VNA should be upgradable for time domain measurement 4.) VNA should be upgradable for frequency offset measurement
33	In-built Display	VNA should have color 10.4 inch or bigger TFT display with touchscreen
34	Temperature	+5 °C to +40 °C
35	Repair and Calibration service	The vendor should have repair and NABL certified calibration facility in India.
36	Warranty	36 Months
37	Model Type	Benchtop

# FORMAT FOR QUOTATION SUBMISSION

(In letterhead of the supplier with seal)

To: \_\_\_\_\_

Date: \_\_\_\_\_

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)
<b>Total Cost</b>							

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: \_\_\_\_\_