

Indian Institute of Technology Delhi

Centre for Applied Research in Electronics

August 15, 2013

Sealed quotations in *separate envelops of technical and commercial bid* kept in a one sealed outer envelope are invited for purchase of 26.5 GHz Handheld Vector Network Analyzer as per specifications given below. Your sealed quotation should reach latest by 5 PM on 30th August 2013 to **Dr. Mahesh P. Abegaonkar, CARE, III-324, Indian Institute of Technology – Delhi (IIT Delhi), Hauz Khas, New Delhi - 110016**. Your quotation should be superscribed “Purchase of 26.5 GHz Handheld Vector Network Analyzer due on 30th August 2013”.

1	Frequency range	30 kHz to 26.5 GHz , 2 Ports
2	RF Connector	3.5mm (male)
3a	Frequency reference accuracy	± 0.7 ppm (spec) + aging
3b	Aging rate	± 1 ppm/yr
4	Dynamic range:	100 dB to 9 GHz, 90 dB to 18 GHz
5	S-parameter measurement	S11, S21, S12, S22 (both Magnitude and Phase)
6	IF bandwidth	10 Hz to 100 kHz
7	Data points or resolution	101, 201, 401, 601, 801, 1001, 1601, 4001, 10,001 , Arbitrary number of points settable through SCPI
8	Cable Antenna test, Distance-to-fault, return loss, cable loss Calibrations: CalReady, OSL, and response cal	
9	Test port output power (nominal)	3dBm : > 625 MHz to 3 GHz 0dBm : >3 to 9 GHz -11dBm : > 9 GHz to 26.5 GHz
10a	Minimum Output Power Level	≤ -45 dBm, nominal Power settable in 1 dB steps across power range
10b	Power level accuracy	± 1.5 dB
11	Trace Noise (-10 to 55 °C) at 300 Hz IF bandwidth	
12	Magnitude	± 0.002 dB (rms) : 10 GHz ± 0.010 dB (rms) : 26.5 GHz
13	Phase	± 0.014 degrees :10GHz ± 0.066 degrees:26.5 GHz
14	Error terms Corrected performance	
a	Directivity	36 dB upto 9GHz 32dB from 9GHz to 26.5GHz
b	Source match	30 dB upto 9GHz 27dB from 9GHz to 26.5GHz
c	Load match	30 dB upto 9GHz 24dB from 9GHz to 26.5GHz
d	Reflection tracking	± 0.13 dB upto 9GHz ± 0.21 dB from 9GHz to 26.5GHz

e	Transmission tracking	± 0.29 dB upto 9GHz ± 0.52 dB from 9GHz to 26.5GHz
15	Receiver compression at 26.5 GHz	10 dBm
16	Immunity to interfering signals	+16 dBm (nominal)
17	Inbuilt Spectrum Analyzer	5KHz to 26.5GHz (tunable to DC)
18	Phase noise Stability, SSB phase noise at 1 GHz	-110 dBc/Hz @ 1MHz offset
19	Displayed average noise level (DANL) reference level of -20 dBm	-130 dBm at 13 GHz -110 dBm at 26.5 GHz
20	Time Domain option	
21	AM/FM tune and listen , field strength measurements, Independent source , group delay measurements , tracking capabilities to the independent source, QUICK CAL facility , Instrument should be supplied with compatible phase-stable cables (2 nos) , 4-in-1 OSLT Mechanical Calibration Kit, DC to 26.5 GHz, Type-3.5 mm (f) 50 ohm	
22	Remote control capability	RF Analyzer should be controlled via an iPad from a remote location. iPad to be provided by vendor
23	Warranty	3 years , NABL accredited Calibration facility and up to 30 parameters (as per NABL)

TERMS AND CONDITIONS:

1. Please quote prices at FOB New Delhi, inclusive of installation charges. CIP charges should be quoted separately.
2. The quotations should be in the currency of the country of origin as well as Indian Rupees wherever possible and should be valid for at least three months.
3. Please attach all the technical literature and a list of similar installations done in India.
4. Standard warranty details (minimum 3 years) should be provided.
5. Payment should be through irrevocable letter of credit.
6. If the quote is being submitted by the representative of the Principals/manufacturer themselves, a valid Agency ship/Dealership Certificate authorizing the agent to quote to IIT Delhi on behalf of the Principals should be enclosed.
7. Complete set of manuals for the operation of equipment should be given.
8. Clearly specify the installation requirements—such as space, power, frequency, environment (Temperature and humidity) etc.
9. If the items quoted are proprietary in nature, please enclose proprietary certificate from the principals stating “certified that _____ is a proprietary item M/s. _____ and no other manufacturer makes these items”.
10. If the bidder is an Indian agent, the agency certificate should be enclosed.
11. Please produce compliance certificate for the specification.
12. Training should be provided free of cost.
13. Delivery period should be specifically mentioned and should be as small as possible.
14. The products will be used for educational purposes. Hence any applicable institutional discounts should be offered and stated.
15. SALES TAX: This Institute is not exempted from the payment of Sales Tax/Service Tax/VAT. The rate (i.e. percentage of Sales Tax should be clearly indicated included or excluded) wherever chargeable.
16. Institute reserves the right to accept or reject any or all the quotations without assigning reasons thereof.