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Tender Details

Date : 08-Jul-2024 05:54 PM

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Basic Details

Organisation Chain	Council of Scientific and Industrial Research||CSIO Chandigarh||Purchase-CSIO-CSIR		
Tender Reference Number	CSIO/7(57)2024-PUR		
Tender ID	2024_CSIR_763297_1		
Tender Type	EOI	**Form of contract**	EOI
Tender Category	Goods	**No. of Covers**	1
Payment Mode	Not Applicable	**Is Multi Currency Allowed For BOQ**	No
Is Multi Currency Allowed For Fee	No		

Cover Details, No. Of Covers - 1

Cover No	Cover	Document Type	Description
1	Fee/PreQual/Technical/Finance	.pdf	EOI for Vector Network analyzer and accessories.

Tender Fee Details, [Total Fee in ₹ * - 0.00]

Tender Fee in ₹	0.00		
Fee Payable To	NA	**Fee Payable At**	NA
Tender Fee Exemption Allowed	NA		

EMD Fee Details

EMD Amount in ₹	0.00	**EMD Exemption Allowed**	NA
EMD Fee Type	NA	**EMD Percentage**	NA
EMD Payable To	NA	**EMD Payable At**	NA

Work /Item(s)

Title	CSIO/7(57)2024-PUR				
Work Description	EOI for Vector Network analyzer and accessories.				
Pre Qualification Details	Please refer Tender documents.				
Tender Value in ₹		**Product Category**	Electronics Equipment	**Sub category**	NA
Contract Type	Tender	**Bid Validity(Days)**	90	**Period Of Work(Days)**	45
Location	CSIR-CSIO	**Pincode**	160030	**Pre Bid Meeting Place**	Please refer NIt documents
Pre Bid Meeting Address	Refer to NIT documents	**Pre Bid Meeting Date**	18-Jul-2024 10:30 AM	**Bid Opening Place**	CSIR-CSIO

Critical Dates

Publish Date	08-Jul-2024 06:00 PM	**Bid Opening Date**	08-Aug-2024 03:30 PM
Document Download / Sale Start Date	08-Jul-2024 06:00 PM	**Document Download / Sale End Date**	07-Aug-2024 03:00 PM
Clarification Start Date	08-Jul-2024 06:00 PM	**Clarification End Date**	06-Aug-2024 03:00 PM
Bid Submission Start Date	08-Jul-2024 06:00 PM	**Bid Submission End Date**	07-Aug-2024 03:00 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	EOI for Vector Network analyzer and accessories.	177.94

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	Tender Documents	vna.pdf	EOI for Vector Network analyzer and accessories.	177.94

Tender Inviting Authority

Name	STORES AND PURCHASE OFFICER
Address	CSIR-CSIO, SECTOR 30C CHANDIGARH

Tender Creator Details	
Created By	Parveen Kumar
Designation	Section Officer
Created Date	08-Jul-2024 05:53 PM

Specifications of the required mm and Sub-THz Vector Network Analyzer

S.No.	Parameter	Requirement
1.	Frequency Range	Base unit with lower frequency band ≤ 10 MHz and higher frequency band ≥ 50 GHz. To Support Frequency Extenders 140 GHz to 220 GHz (Extended bands may be discontinuous) Along with suitable launchers (Upgradable till at least 1500GHz or more in the future) The base unit of VNA, along with extenders, continuous or discontinuous, must comply with specifications from (25-43) accordingly.
2.	Frequency Resolution	1 Hz or better
3.	Frequency Stability	Within ±0.5 ppm/year or better
4.	No of Test Ports	2 Ports extendable to 4 ports later through the controller unit or any other suitable process
5.	Internal sources	1 Source or more
6.	Number of Sweep Points	100000 or more
7.	IF Bandwidth	1 Hz to 15 MHz or better
8.	System dynamic range (at test port) at 10 Hz IF bandwidth	500MHz to 40GHz: > 120 dB or better 40 GHz to 50GHz: > 110 dB or better
9.	Maximum output Power	10MHz to 40 GHz: ≥ +6 dBm
		40 GHz to 50 GHz: ≥ -5 dBm
10.	Minimum output Power	≤ -30 dBm
11.	Power resolution	0.01 dB
12.	Corrected System Performance (with quoted Cal kit, Full frequency range of the base unit)	
	Directivity	≥ 34 dB
	Source & Load Match	≥ 30 dB
	Reflection & Transmission Tracking	≤ ±0.15 dB
13.	Phase Noise @ 10 kHz Offset	< -125 dBc/Hz @ 1 GHz
		< -110 dBc/Hz @ 10 GHz
		< -104 dBc/Hz @ 20 GHz
14.	Measurement capabilities	S parameters i.e. S11, S12, S22, S21 (Mag. and phase)
15.	Display capabilities	Log Mag, Lin Mag, Phase, Delay, Smith, Polar, SWR, Real, Imaginary, Unwrapped Phase, Positive Phase, Inverted Smith.
16.	Input damage power level for test ports (at all the ports)	> +27 dBm RF, 40 VDC (the vendor may provide a suitable external DC block to comply)
17.	Display	At least 10 to 12-inch or higher diagonal color active-matrix LCD 1280 (horizontal) X 800 (vertical) resolution
18.	Number of Channels	More than 20 channels must be provided for multiple displays on the screen
19.	Sweep Type	CW, Linear, Log, Power, Segment
20.	Time Domain Analysis	Time domain analysis should be available to view reflection and transmission responses in

		time or distance. Time Gating feature should be available.
21.	Connectivity	Mini DisplayPort, LAN, USB, VGA, GPIB interface
22.	Data Storage	Internal drive with minimum 80 GB storage capacity
23.	VNA cables	2.4 mm (compatible to test port) to 2.4 mm (male); 1 nos. 2.4 mm (compatible to test port) to 2.4 mm (female); 1 nos. • Cables must be Phase Stable • Cable Length at least 1 metre
24.	Calibration kits	1. 2.4 mm Electronic Calibration kit or the Auto Cal Kit (As per the base-unit frequency range) 2. 2.4 mm Mechanical Calibration kit (As per the base unit frequency range), with both female and male standards (open, short, load, thru) with a Torque wrench or any other applicable accessories
25.	Supporting Connectors (each 2 Nos)	2.4 mm (female) to 2.4 mm (female) 2.4 mm (male) to 2.4 mm (male) 2.4 mm (female) to 2.92 mm (female) 2.4 mm (female) to 2.92 mm (male) 2.4 mm (male) to 2.92 mm (female) 2.4 mm (male) to 2.92 mm (male) 2.4 mm (female) to N-type (male) 2.4 mm (male) to N-type (male) 2.92 mm (female) to 2.92 mm (female) 2.92 mm (male) to 2.92 mm (male) N-type (female) to N-type (female) 2.4 mm (female) to SMA 3.5 (female) 2.4 mm (female) to 3.5 (male) 2.4 mm (male) to 3.5 (female) 2.4 mm (male) to 3.5 (male)
Specifications for Vector Network Analyzer Extenders Module (140 GHz to 220GHz) Extenders module should be compatible with the quoted VNA base unit for Full 2-port S-parameter measurement. All the required interfaces between the VNA and the extender should be provided with the required interconnect kit and cables.		
26.	Waveguide Frequency Range	WR-5.1: 140 GHz to 220 GHz
27.	Output Power at the Waveguide Port	≥ 6 dBm
28.	Maximum Damage Level	≥ 30dBm
29.	Dynamic Range	≥ 100 dB (Entire Frequency Range 140-220GHz)
30.	RF/LO Input Connector	2.92 mm(f) or Equivalent
31.	Output Connector	Pair of WR-5.1 Waveguide Flange
32.	Launchers	Pair of WR-05 Std gain horn antenna (140-220 GHz) • Must be Compatible with the waveguide flange (S.no. 31) • Must be provided with alignment pins
33.	RF Input power range (in case of extenders are being provided)	10 dBm max.

34.	LO input power range (in case of extenders are being provided)	10 dBm max.
35.	Calibration Kit	Compatible WR-5.1 calibration kit to be provided
36.	Back-up Power Supply	A suitable power backup is to be supplied with the module with at least 30 minutes of backup.
37.	High Gain Lens Horn Antenna	• 2 Nos. of (Rx and Tx) of 140-220 GHz High Gain Lens Horn Antenna to be provided compatible with the extension module or to be provided with suitable adapters as required by the module for connections. • The antennas must have gain > 40dBi • Must convert incoming wave from extender to planar waves
	Future Upgradability	
38.	Frequency	System should be upgradable to at least 1500 GHz frequency range
39.	Material Measurement Software	Material measurement software compatibility required to measure εr', εr", tan δ, μr', μr", tan δ and Cole-Cole up to 1500GHz or more
40.	Application Software upgrade	1. The instrument should be compatible with Frequency translating devices like mixer, receiver. 2. Pulsed S-parameters measurement 3. Automatic Fixture Removal or any other suitable method to ensure on-wafer measurement for future
41.	Optical measurement	Must be upgradable to Optical measurement with the provided base unit remaining same
	Warranty /Earlier installations/Service	
42.	Warranty	At least 3 years of warranty over Base Unit & extended Module
43.	Earlier Installations	Vendor Must submit installation certificates/ proof of a minimum 2 successfully executed orders of Sub THz / THz Range VNA (i.e., 100 GHz or above) in other Government Institutions or institutions of Repute in India. Certificates of installations must be submitted as a proof of compliance.
44.	Service and Training	Service must be available in India. A minimum of three-day training sessions is to be provided at CSIR-CSIO during the installation

Note: The vendor must provide documented proof from the OEM in the form of company brochures/ certified letterhead, etc., to ensure compliance with the above specifications.

Time of meet: July 18,2024 at 10:30
Online meeting link: Kindly mail to – np@csio.res.in, dhairya@csio.res.in
Offline meet: Director Conference room, CSIR-CSIO, Sector 30 C Chandigrh-160030
For clarifications email at: spo@csio.res.in, parveenky@csio.res.in, np@csio.res.in, dhairya@csio.res.in