

TENDER DOCUMENT

SUB: TWO PORT VECTOR NETWORK ANALYZER WITH INBUILT SPECTRUM ANALYSER

TWO BID PUBLIC TENDER

SUBMIT TECHNICAL AND PRICE BID IN TWO SEALED ENVELOPES

TENDER NO. : SMR/CE3/VIZ/CP011/2022-23/PT
DUE ON : 25.07.2022 17:00 hrs.
EMD : Rs. 80,000/-
TENDER FEE : Rs. 1000/- + 18% GST



Society for Applied Microwave Electronics Engineering and Research (SAMEER)
Centre for Electromagnetic Environmental Effects (E3), Visakhapatnam
(Ministry of Electronics and Information Technology (MeitY), Government of India)
Plot No. 40, APIIC Industrial Park, NH-16, Gambheeram, Anandapuram,
Visakhapatnam-531163, Andhra Pradesh, India.
Email: purchasevizag.sameer@nic.in, Phone: (+91-891) 2867612, Fax: (+91-891) 2867601

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SECTION – I

INSTRUCTIONS FOR SUBMITTING THE OFFER

1. Tender document can be purchased from the Accounts Section of SAMEER CE3 located at Plot No.40, APIIC Industrial Park, NH-16, Gambheeram, Anandapuram, Visakhapatnam-531163, Andhra Pradesh, India between 1.30 pm to 4.30 pm, on cash payment, on all days except Saturdays, Sundays and public holidays.

If the Tender document is downloaded from our website ce3.sameer.gov.in or CPPP Portal then Tender fee (including GST) as well as EMD should be paid, along with Technical Bid, (EMD & Tender Fee (including GST) should be paid separately). In such case Tender Fee (including GST) should be paid in the form of Demand Draft drawn in favor of “**SAMEER Centre for Electromagnetic Environmental Effects (E3), Visakhapatnam**”, from any Indian Commercial Bank.

If the Tender Fee (including GST) is not paid for any reason, offer will be treated as invalid.

2. Earnest Money Deposit (EMD):

A. Earnest Money Deposit should be submitted in the form of Account Payee Demand Draft, Banker's Cheque or Bank Guarantee from any commercial bank of India, drawn in favor of “**SAMEER Centre for Electromagnetic Environmental Effects (E3), Visakhapatnam**”. If the EMD is given in the form of Bank Guarantee or Fixed Deposit, then it should be valid for minimum 15 days beyond the validity of the quotation.

B. **Refund of EMD:** Unsuccessful tenderer's earnest money will be returned to them **without any interest** once the tender is finalized. Successful bidder's earnest money will be returned **without any interest** only after submission of Security Deposit (Performance Security).

C. **Forfeiture of EMD:** Earnest money of a tenderer will be forfeited, if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. Successful tenderer's earnest money will be forfeited if tenderer does not execute purchase order / contract as per the terms and conditions mentioned therein.

D. **Exemption from submission of EMD :** Firms which are registered with MeitY or All MSEs having registration as per provisions of the MSME Policy i.e. registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or directorate of Handicrafts and Handlooms or Udyog Aadhaar Memorandum or any other body specified by Ministry of MSME are also exempt from payment of EMD. Proof of valid registration should be attached along with the Technical Bid, failing which the Tender will be rejected.

3. A. In a tender, either the Indian Agent on behalf of the Principal / OEM (Original Equipment Manufacturer) or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.

B. If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

Failure to adhere to the above conditions will lead to automatic disqualification of the bid. Tenders submitted by the Indian agent on behalf of his principal /OEM should be supported with a letter of authority from the Principal/ OEM.

In case the manufacturer does not have an authorized representative in India at the time of submission of the bids and the company appoints a representative later on, SAMEER will only correspond with the manufacturer.

4.PERFORMANCE SECURITY

a. The successful bidder has to give Performance Security Deposit in the form of an Account Payee Demand Draft / Bank Guarantee from an Indian commercial bank / a counter Letter of Credit (LC) from our bankers (in case of foreign order), for 10 % of Order Value, immediately after receiving the purchase order. Performance Security should remain valid for a period of sixty days beyond the date of all contractual obligations including warranty obligations.

b. Successful tenderers Performance Security will be forfeited if the purchase order / contract is not executed as per the terms and conditions mentioned therein.

c. Performance Security Deposit without any interest will be returned only after complete execution of purchase order (including warranty period), as per purchase order's terms and conditions.

5. Tender is to be submitted in **two separate sealed covers, superscribed as 'Technical Bid' and 'Price Bid'** respectively and both these sealed covers are to be put in a bigger cover which should also be sealed and duly superscribed. Tender should be addressed to '**The Purchase Officer, SAMEER CE3, Plot No.40, APIIC Industrial Park, NH-16, Gambheeram, Anandapuram, Visakhapatnam-531163, Andhra Pradesh, India**'. Tender reference including 'Due Date' should be clearly mentioned on all covers. Name, Address, and contact details of the vendor should be mentioned at back side of all covers.

6. Further details concerning 'Technical Bid' and 'Price Bid' are given below:

A. Technical Bid:

- ❖ Original manufacturer's technical specification sheet must support details provided in the Technical bid with all the specifications/ relevant technical Literatures/Brochures/Catalogues for the item. Bids received without the printed technical specification sheet/brochures/catalogues for item will be technically disqualified.
- ❖ The Technical Bid should not contain any **price information**.
- ❖ The item and accessories quoted must be from original manufacturer and must be new (**No second hand item/sub-item will be accepted**).
- ❖ In case the bidder is the authorized representative of a foreign manufacturer/supplier, a certificate from the principal must be included along with the technical bid.
- ❖ In case of deviation or substitution from the particular specification contained in the tender document, please indicate clearly as 'Alternative offer' and should contain sufficient details to show that the alternative would equally serve the purpose. All

relevant technical data should be enclosed. In case of equipment, the itemized cost of essential accessories, optional accessories and spares required need to be specified.

❖ **Technical Bid should contain the following information:**

- a. **Earnest Money Deposit (EMD)**
- b. **Tender Fee** (if tender document is not purchased from The Accounts Section, SAMEER CE3, Visakhapatnam).
- c. **Technical Specification**
- d. **SECTION III** of Tender Document i.e., Commercial Terms & Conditions duly filled, stamped and signed.
- e. A copy of '**Price Bid**' with all financial figures **suppressed/deleted**.

Technical Bid without the above information will not be considered.

B. Price Bid:

Price bid shall contain the following information:

- a. Quotation for the items (including the price break up for all options and accessories).
- b. TAXES, DUTIES AND LEVIES if applicable should be clearly specified.
- c. Discount offered on quoted price (considering that SAMEER is an R&D organization).
- d. Total price should be mentioned in both figures and words. Alterations, if any, should be attested / initialed.
- e. The bid shall be free of hidden costs / ambiguity.
- f. There shall be no overwriting.

7. Tenders/Bids should be dropped in **Tender Box** only.

8. Tender received via email, fax and Late Tenders will not be considered.

9. Unsuccessful bidders will **not be formally informed** of the result of their tender.

10. Only **Technical Bid** will be opened on the next day of the due date. The tenderers or authorized representatives may make themselves available at that time. The Price Bids of the technically short-listed tenderers will be opened at a later date with intimation to the short-listed tenderers.

11. Date and Timing for opening Tender: Next working day after due date at 10.30 AM

12. For any clarification, please mail to purchasevizag.sameer@nic.in

13. Corrigenda: Corrigenda, if any, to this tender will be published on our website ce3.sameer.gov.in. The bidders are advised to check our website, before submitting the bid.

SECTION-II: TECHNICAL SPECIFICATIONS FOR TWO PORT VECTOR NETWORK ANALYZER WITH IN-BUILTS SPECTRUM ANALYZER

1.0 PLAN AND SCOPE

- 1.1 To supply Two Port Vector Network Analyzer with in-built spectrum analyzer.
- 1.2 Detail datasheets, drawings and sufficient information should be given for all the equipment's.
- 1.3 Test report should be submitted along with detail specifications.

2.0 VENDOR CRITERIA:

- 2.1 Only OEM or authorized supplier of OEM are eligible to make BID
- 2.2 The OEM should have representative in India
- 2.3 Vendor should quote for all items.
- 2.4 Vendor should have supplied at least 50 analyzers of similar or better specifications to reputed research labs in India or in world.

3.0 BILL OF MATERIAL

Table 1: Bill of Material for VNA with SA

S. No	Parameter	Specifications	Quantity
1.	Two Port Vector Network Analyzer with in-built Spectrum Analyzer	As per specifications in Table 2	1 No
2.	Time Domain analysis with gating (Software license)	Suitable for the VNA with SA from Sr. 1	1 No
3.	RF Cable 50 Ohm, DC to 20 GHz (or above), flexible, phase stable, 610 mm (24 inch)	Suitable for the VNA with SA from Sr. 1	2 No
4.	Calibration kit, 50 Ohm, 0 Hz to 20 GHz (above), open, short, match, Through combination (Complete TOSM)	Suitable for the VNA with SA from Sr. 1	1 No

TABLE 2: DETAIL TECHNICAL SPECIFICATIONS

S.No.	Parameter	Specifications
		VNA Specifications
1.	No. of VNA test ports	Two with one internal source
2.	Frequency Range	9 kHz (or less) to 20 GHz
3.	Frequency Resolution	1 Hz or Better
4.	Frequency Accuracy	±1 ppm or better
5.	Number of Data Points per Trace	1 to 1,00,000
6.	Internal bias tee	Yes, ± 25 VDC (or better)
7.	Measurement Bandwidth	10 Hz (or less) to 100 KHz (or better)
8.	Dynamic Range with IFBW =10 Hz (spec)	≥ 100 dB or better
9.	Directivity with Mechanical Kit	≥ 35dB @ 9 kHz to 20 GHz
10.	Source Match with Mechanical Kit	≥ 20 dB @ 100 kHz to 10 GHz
11.	Load Match with Mechanical Kit	≥ 30 dB @ 9 kHz to 20 GHz
12.	Reflection Tracking with Mechanical Kit	≤ 0.08 dB @ 9 kHz to 20 GHz
13.	Transmission Tracking with Mechanical Kit	≤ 0.02 dB @ 9 kHz to 20 GHz
14.	Trace Noise Magnitude	≤ 10mdB rms @ 9 kHz to 20 GHz
15.	Trace Noise Phase	≤ 0.04° @9 kHz to 20 GHz
16.	Maximum Test Port Output Power	≥ 0 dBm @9 kHz to 20 GHz
17.	Test port Connector	3.5 mm / N Type, 50 Ω nominal
18.	Harmonics at 0 dBm	≤ -20 dBc or better @ 9 kHz to 20 GHz
19.	Measurement Format	Normal and differential S Parameters, Log Mag , Linear Magnitude, SWR, Group Delay, Smith Chart, Phase, Real, Imaginary
20.	Other Features	Admittance & Impedance Parameters, Embedding/ De-embedding, Stability factors (K, u1, and u2) should be available.
21.	Accessories	Mechanical Calibration kit of Type-N (f) & With compatible Phase Stable RF cables to be provided (SOLT or TOSM).

		Additional accessories required for satisfactory functionality.
22.	Interfaces	LAN, GPIB, at least 2 Nos High Speed USB 2.0, 1 Gigabyte Ethernet LAN
23.	Display	≥ 8inch Color display In-Built to instrument
24.	Programming Software	VNA should be supplied with programming software with following features should be provided. [a] Built-in command documentation [b] Built-in command syntax verification [c] Command sequencing and execution- [d] Interfacing with LabVIEW / NI chasis / TILE should be configurable
25.	Support for Time domain (Time Domain Gating)	Should be provided
26.	Operating Temperature	0 to 50°C
27.	Operating os	Windows 10 or better
28.	Power Supply	230 VAC, 50 Hz
29.	Warranty	03 years or more
30.	Optional Items additionally to be offered	Distance domain Analysis, Port impedance adaptable to 75Ω Extended warranty of 2 years
Spectrum Analyzer		
31.	Frequency Range	9kHz – 20GHz or better
32.	Resolution Bandwidth	1Hz – 10MHz in 1/2/3/5 steps
33.	Sweep Time	6μs or above in zero span or better
34.	Traces	Normal, Max Hold, Min Hold, Average, # of Averages
35.	Preamplifier	In- built
36.	Markers	6 or more
37.	Detectors	Peak, Negative, Sample, Quasi peak, RMS
38.	DANL	-120dBm or below
39.	Dynamic Range	≥ 100dBm or better for entire frequency range

TABLE 3: TECHNICAL DETAIL FORM (TO BE FILLED BY VENDOR)

S.No.	Parameter	Specifications	Vendor Remarks
VNA Specifications			
1.	No. of VNA test ports	Two with one internal source	
2.	Frequency Range	9 kHz (or less) to 20 GHz	
3.	Frequency Resolution	1 Hz or Better	
4.	Frequency Accuracy	±1 ppm or better	
5.	Number of Data Points per Trace	1 to 1,00,000	
6.	Internal bias tee	Yes, ± 25 VDC (or better)	
7.	Measurement Bandwidth	10 Hz (or less) to 100 KHz (or better)	
8.	Dynamic Range with IFBW =10 Hz (spec)	≥ 100 dB or better	
9.	Directivity with Mechanical Kit	≥ 35dB @ 9 kHz to 20 GHz	
10.	Source Match with Mechanical Kit	≥ 20 dB @ 100 kHz to 10 GHz	
11.	Load Match with Mechanical Kit	≥ 30 dB @ 9 kHz to 20 GHz	
12.	Reflection Tracking with Mechanical Kit	≤ 0.08 dB @ 9 kHz to 20 GHz	
13.	Transmission Tracking with Mechanical Kit	≤ 0.02 dB @ 9 kHz to 20 GHz	
14.	Trace Noise Magnitude	≤ 10mdB rms @ 9 kHz to 20 GHz	

15.	Trace Noise Phase	$\leq 0.04^\circ$ @9 kHz to 20 GHz	
16.	Maximum Test Port Output Power	≥ 0 dBm @9 kHz to 20 GHz	
17.	Test port Connector	3.5 mm / N Type, 50 Ω nominal	
18.	Harmonics at 0 dBm	≤ -20 dBc or better @ 9 kHz to 20 GHz	
19.	Measurement Format	Normal and differential S Parameters, Log Mag, Linear Magnitude, SWR, Group Delay, Smith Chart, Phase, Real, Imaginary	
20.	Other Features	Admittance & Impedance Parameters, Embedding/ Deembedding, Stability factors (K, u1, and u2) should be available.	
21.	Accessories	Mechanical Calibration kit of Type-N (f) & With compatible Phase Stable RF cables to be provided (SOLT or TOSM). Additional accessories required for satisfactory functionality.	
22.	Interfaces	LAN, GPIB, at least 2 Nos High Speed USB 2.0, 1 Gigabyte Ethernet LAN	
23.	Display	≥ 8 inch Color display In-Built to instrument	
24.	Programming Software	VNA should be supplied with programming software with following features should be provided. [a] Built-in command documentation [b] Built-in command syntax verification [c] Command sequencing and execution- [d] Interfacing with LabVIEW / NI chasis / TILE should be configurable	
25.	Support for Time domain (Time Domain)	Should be provided	

	Gating)		
26.	Operating Temperature	0 to 50°C	
27.	Operating os	Windows 10 or better	
28.	Power Supply	230 VAC, 50 Hz	
29.	Warranty	03 years or more	
30.	Optional Items additionally to be offered	Distance domain Analysis, Port impedance adaptable to 75Ω Extended warranty of 2 years,	
Spectrum Analyzer			
31.	Frequency Range	9kHz – 20GHz or better	
32.	Resolution Bandwidth	1Hz – 10MHz in 1/2/3/5 steps	
33.	Sweep Time	6µs or above in zero span or better	
34.	Traces	Normal, Max Hold, Min Hold, Average, # of Averages	
35.	Preamplifier	In- built	
36.	Markers	6 or more	
37.	Detectors	Peak, Negative, Sample, Quasi peak, RMS	
38.	DANL	-120dBm or below	
39.	Dynamic Range	≥ 100dBm or better for entire frequency range	

SECTION- III: COMMERCIAL & OTHER TERMS AND CONDITIONS

Vendor to state Complied / Not Complied – Deviations if any in the REMARKS column

S.No.	DESCRIPTION	ESSENTIAL CONDITIONS	REMARKS
a.	PRICES	<p>a. For Import Order: Prices quoted should be on DAP charges (Visakhapatnam) from Vendor's manufacturing facility to SAMEER CE3, Visakhapatnam.</p> <p>b. For Local Order: Prices should include delivery charges up to SAMEER's Stores. Any additional charges, taxes and levies should be clearly mentioned. In the event of a Purchase Order, it will be the responsibility of the supplier to pay whatever charges are payable to different agencies in their country. The purchaser will not pay any charges other than the agreed price as per the contract.</p>	
b.	TAXES, DUTIES AND LEVIES APPLICABLE	<p>(Existing applicable rates should be mentioned)</p> <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p>	
c.	PACKING	All the items should be packed in suitable boxes, crated and protected from damages during the transit till they are delivered to destination.	
d.	FREIGHT AND INSURANCE	<p>a. For Local Order: To be arranged by supplier. All the items shall be delivered to Stores Officer, SAMEER CE3, Visakhapatnam after obtaining a shipping release in the appropriate pro-forma from the purchaser. The Vendor shall be fully responsible for the safe delivery of all the items from and to SAMEER CE3, Visakhapatnam and shall satisfy the purchaser that adequate measures have been taken for the same.</p> <p>b. For Import Order: Delivery should be at SAMEER CE3, Visakhapatnam.</p>	
	<p>Vendor's Signature: _____ Seal: _____</p>		

e.	ANY OTHER CHARGES APPLICABLE	SUPPLIER TO SPECIFY	
f.	MODE OF DELIVERY	a. For Local Order: By road b. For Import Order: By Air	
g.	DELIVERY SCHEDULE	Within 16 weeks from the date of work order	
h.	WARRANTY	Three years or more	
i.	PAYMENT TERMS	a. For Import order: 90 % against Irrevocable Letter of Credit or Sight Draft and balance 10 % through wire transfer after acceptance of material at SAMEER. b. For Local order: 100% after delivery followed by inspection, test, Installation & acceptance (whichever is applicable) of material / consignment, at SAMEER.	
j.	VALIDITY OF QUOTATION	90 DAYS MIN FROM THE DUE DATE.	
k.	Tender Fee (Including GST)	If not paid in cash, then by Demand Draft from any commercial bank of India, drawn in favour of “SAMEER Centre for Electromagnetic Environmental Effects (E3), Visakhapatnam” . If the Tender Fee (including GST) is not paid for any reason, offer will be treated as invalid.	
l.	Earnest Money Deposit (EMD)	Earnest Money Deposit (EMD) should be submitted in the form of Account Payee Demand Draft, Banker’s Cheque or Bank Guarantee from any commercial bank of India, drawn in favour of “SAMEER Centre for Electromagnetic Environmental Effects (E3), Visakhapatnam” For exemption, please refer SECTION I, 2 d	
<p>Vendor’s Signature: _____ Seal: _____</p>			

m.	PERFORMANCE SECURITY	The successful bidder has to give Security Deposit in the form of an Account Payee Demand Draft / Bank Guarantee from an Indian commercial bank / a counter Letter of Credit (LC) from our bankers (in case of foreign order), for 10 % of Order Value, immediately after receiving the purchase order. Performance Security should remain valid for a period of sixty days beyond the date of all contractual obligations including warranty obligations.	
n.	EXEMPTION FOR CUSTOM DUTY AND EXCISE DUTY	SAMEER is registered with Department of Scientific and Industrial Research (DSIR) for the purpose of availing custom duty exemption in terms of Government of India Notification No. 51/96-customs amended to 24/2007-customs dated 1 st March 2007. {approx. 5.20% duty is applicable under his notification (5 % Basic + cess/surcharge)} and central excise duty exemption in terms of Government Notification no. 10/97-central excise amended to 16/2007-central excise dated 1 st March 2007.	
o.	JURISDICTION	VISAKHAPATNAM	
<p style="text-align: center;">Vendor's Signature: Seal:</p>			

SECTION- III-B: OTHER TERMS AND CONDITIONS

Sr. No.	Product Specification / Service requirements	Required specifications	Remarks YES/NO
1.	Calibration certificate for VNA with SA, Calibration Kit & RF cables	Obtained from ISO/IEC 17025 accredited calibration laboratory	
2.	Comprehensive AMC for the period of 5 years beyond standard warranty	Provide terms and conditions of AMC Confirm	
3.	ISO/IEC 17025 accredited calibration of VNA with SA (calibration report should show MU values) for the period of 5 years after standard warranty on per year basis	Confirm calibration	
4.	Vendor to confirm upgrade of firmware and software as and when available	Confirm availability for upgrade of firmware & software upgrade	
5.	Vendor to confirm after sales support for minimum period of 10 years	Confirm after sales support for 10 years	
6.	Confirm availability of software and firmware upgrade for as and when available	Confirmation Required	
7.	Availability of soft copy of operational, service and calibration manual for the product	Confirm availability for requested manuals	

Vendor's Signature:

Seal:

SECTION- IV: PRICE BID

Format for Price Bid (in Foreign Currency)

IMPORTANT

Vendor is required to submit the price bid in the given format on their LETTER HEAD.
One copy of the price bid without the financial figure should be enclosed along with the Technical Bid.

ITEM	DESCRIPTION	QUANTITY	RATE IN (Name of currency)	PRICE IN (Name of currency)
1.	Two Port Vector Network Analyzer with in-built Spectrum Analyzer	1 No		
2.	Time Domain analysis with gating (Software license)	1 No		
3.	RF Cable 50 Ohm, DC to 20 GHz (or above), flexible, phase stable, 610 mm (24 inch)	2 No's		
4.	Calibration kit, 50 Ohm, 0 Hz to 20 GHz (above), open, short, match, Through combination (Complete TOSM)	1 No		
5.	ADDITIONAL CHARGES IF ANY			
6.	TAXES, DUTIES AND LEVIES			
	a.			
	b.			
	c.			
	d.			
7.	DAP CHARGES (Visakhapatnam) from Vendor's manufacturing facility to SAMEER CE3, Visakhapatnam.			
<p align="center">Vendor's Signature: Seal:</p>				

Format for Price Bid (in INR)

IMPORTANT

Vendor is required to submit the price bid in the given format on their LETTER HEAD.

One copy of the price bid without the financial figure should be enclosed along with the Technical Bid.

ITEM	DESCRIPTION	QUANTITY	RATE IN INR	PRICE IN INR
1.	Two Port Vector Network Analyzer with in-built Spectrum Analyzer	1 No		
2.	Time Domain analysis with gating (Software license)	1 No		
3.	RF Cable 50 Ohm, DC to 20 GHz (or above), flexible, phase stable, 610 mm (24 inch)	2 Nos		
4.	Calibration kit, 50 Ohm, 0 Hz to 20 GHz (above), open, short, match, Through combination (Complete TOSM)	1 No		
5.	OTHER CHARGES			
6.	TAXES AND DUTIES APPLICABLE ON ITEMS			
	I			
	II			
	III			
7.	FREIGHT: DAP Charges From Vendor's manufacturing facility to SAMEER CE3, Visakhapatnam.			
8.	INSURANCE			
9.	ADDITIONAL CHARGES IF ANY			
	TOTAL AMOUNT			
	TOTAL AMOUNT (IN WORDS)			
<p>Vendor's Signature: _____ Seal: _____</p>				

CHECK LIST FOR SUBMISSION

Sr.	Description	Yes / No
1	List of Installations in India & abroad	
2	Technical Compliance as per Table 3 from page 9	
3	COMMERCIAL TERMS as per Section III	
4	Other terms as per Section III B	
5	PRICE BID as per Section IV	
6	COPY OF PRICE BID WITH NO PRICE VALUES	
7	Brochures and other details	
8	Additional Information if any	