


Cover page to the tender document

	<p align="center">ELECTRONICS CORPORATION OF INDIA LTD (A Government of India Enterprises) Communication Systems Group, ECIL(PO), Hyderabad - 500 062, Telangana State</p>
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Name of Organisation	Electronics Corporation of India Limited, Hyderabad - 500 062 {Telangana State}		
Type of Organisation	Public Sector Undertaking	Ministry : Department of Atomic Energy	
Tender Ref. No :	ECIL/CNSG-MMD/S/09-4468PT		
Tender Title:	Supply of Real Time Spectrum & Signal Analyser		
Product Category	Electronic Test Equipment.		
Document Cost:	Rs. 2,000		
Tender Value	EMD : Rs. 1,00,000/-	Security Deposit: @ 10% of order value	
Tender type:	Buy		
Location:	Hyderabad, Telangana State		
Request for quote date	18.06.2014		
Last date for submission of bids	18.07.2014 up to 15.00 hrs.		
Opening date of Part I	19.07.2014 @ 14.00 hrs.		
Description of Item:	Item Description	Quantity	
	Real Time Spectrum & Signal Analyser	1 No.	
Pre – Qualification	<u>As per specifications given in the tender</u>		
Tender Document	<u>View Tender Document *</u>		
Bid Document	<u>View Price Bid Document *</u>		
Technical Document	<u>View Technical Document *</u>		
Sector:	Electronics		
State:	Telangana State		
For further Information Contact: DGM, MMD-CNSG,ECIL			
E – Mail:	cndmmd@ecil.co.in		
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E-mail: cndmmd@ecil.co.in {<http://www.ecil.co.in>}

Tender No: ECIL/CNSG-MMD/S/09-4468PT

Date: 18.06.2014

Tender Document

1. Invitation to Tender:

Electronics corporation of India limited, communication system group invites “Two part Bid” for “Supply of Real Time Spectrum & Signal Analyser as per details given below.

2. Important Dates:

Due date for submission of two part bids : **18.07. 2014 up to 15.00 Hrs..**

Techno-commercial bid (part 1) will be opened on **19.07. 2014 at 14.00 Hrs.** Interested vendors may be present with prior permission.

After evaluation of the techno- commercial bids, qualified list of vendors will be finalized. Price bid (part 2) of the qualified vendors will be opened at a later date, which will be communicated to the qualified vendors.

3. Manner and method of submission of offers:

All pages of the tender shall be numbered and typed on the letter head of the vendor and be duly signed and stamped by company’s authorized signatory. Hand written quotation will be summarily rejected. Corrections if any shall be duly authenticated with signature and seal of the company.

The quotation in prescribed form to this invitation shall be submitted in two parts and in different sealed envelopes super scribing tender number with due date.

Part-I (Technical Bid): It shall comprise of two sections namely technical section and commercial section and both sections shall be submitted along with tender fee and EMD in a single sealed envelope. This bid shall not contain any price details.

Part-II (Price Bid): It shall comprise of price details and shall be submitted in a separate sealed envelope.

The above two sealed envelopes of Part-I & Part-II shall be put in a single sealed envelope and submitted to the attention of Deputy General Manager, CNSG-MMD, ECIL Post, Hyderabad 500 062, Telangana State, India.

4. Cost of Tender Documents:

Tender fee of Rs. 2,000/- is to be remitted along with the techno-commercial bid in the form of a crossed bank draft favoring “Electronics Corporation of India Limited” from a nationalized bank payable at Hyderabad. The cost of tender document is non- refundable.

5. Earnest Money Deposit (EMD):

Earnest money deposit of Rs. 1,00,000/- shall be submitted along with the techno-commercial bid in the form of demand draft favoring Electronic Corporation of India Limited or a Bank Guarantee valid for a period of six months drawn from a nationalized bank payable at Hyderabad. The EMD deposited by the unsuccessful bidders will be refunded without interest after finalization of the order. The EMD of the successful bidder will be appropriated towards security deposit. The bids will not be considered in the absence of payment towards the cost of tender documents and EMD.

6. Security deposit (SD)

The successful bidder will be required to remit a Security deposit equivalent to 10% of the purchase order value exclusive of taxes and duties etc. after adjusting the EMD amount already remitted. SD is to be remitted along with the order acceptance in the form of a crossed bank draft favoring Electronic Corporation of India Limited or a Bank Guarantee from a nationalized bank payable at Hyderabad. The security deposit will be forfeited in the event of failure to execute the purchase order. The security deposit will be refunded without interest after the purchase order is successfully executed to the satisfaction of the purchaser.

7. Items tendered for:

Sl. No	Items description	Qty
01	Supply of Real Time Spectrum & Signal Analyser (Details are given in the technical document)	1 No.

Intending bidders who have not yet registered with ECIL are also requested to download “Suppliers Registration Form” from web site www.ecil.co.in/tenders, fill it up and send the same along with the bids.

TENDER SUBMISSION FORMAT (PRICE BID DOCUMENT)

Tender No: ECIL: CNSG-MMD:S:09-4468PT

Date: 18.06.2014

I Vendor Particulars:

Name and address of the bidder	
Telephone, fax and e-mail	
Name and designation of the Officer representing Vendor	

II Items tendered for:

Sl. No	Items description	Qty	Rate	Value
01	Supply of Real Time Spectrum & Signal Analyser	1 No.		
02	Extended Warranty for 2 years after completion of free standard warranty period of 1 year.	1 lot		

III Terms and Conditions:

1	Terms of price	
2	Payment terms (please refer General Terms and Conditions of this tender)	
3	Rate of Excise duty, Service Tax, and any other taxes and duties applicable. (In case the Vendor imports any item directly Customs duty exemptions will not be provided by ECIL) Note: Vendor shall specifically mention applicability of all taxes and duties. In the absence of specific confirmation of taxes and duties, the quotation is liable to be rejected.	
4	Tendered items are required immediately. Vendors are requested to quote earliest possible delivery schedule.	
5	Standard Warranty (Minimum 1 year from the date of installation)	
6	Estimated Packing & Forwarding Charges	
7	Validity of Quotation (Minimum 90 days)	
8	DD No. & Date for Cost of Tender Documents.	
9	DD No. & Date for EMD.	
10	CST Registrati0n Number	
11	TIN Number.	
12	Income Tax PAN Number	
13	ISO-9000 Certificate or any other certificate	
14	SSI/NSI Registration Number, if applicable.	
15	Any other relevant information	
16	Bank Details with RTGS.	

Note : The vendor shall submit offer in the above format only. Against each instructions mentioned below the Vendor shall give a comment Complied (√) or Not complied (x)

Instructions:

- a. No Columns shall be left blank in the format.
- b. Incomplete forms, counter offer and deviation from the terms and conditions will be summarily rejected.
- c. Photostat copies of quote/offer will not be accepted. Only originals received within the time limit will be accepted.
- d. The vendor shall submit the certificate of Registration under Micro, Small and Medium enterprises development Act, 2006, in case of applicability.
- e. The offer shall meet point wise compliance to all points of tender document. Wherever non-compliance is there, suitable explanation needs to be provided.
- f. Technical proposal need not be restricted to the user requirements as given above. Any additional features may be added in the proposal to make it a professional package.
- g. Technical proposal may be as detailed as possible with functional block diagrams where ever applicable.
- h. Foreign vendors shall offer bids directly or through their Indian Partners / Representatives.

General criteria for acceptance of tenders

1. **Technical specification:** vendor shall comply with the technical specification given in the technical document. The commercial offer of the vendor who satisfies the technical requirement only will be opened – complied/ not complied
2. **Experience:** vendor shall provide details with documentary evidence the experience in supply of similar systems - complied / not complied.
3. **Warranty:** One year free warranty and support for additional two years to be provided against all manufacturing defects and software updates if any - complied / not complied.
4. Foreign vendors shall have a branch office in India / Indian partners / representatives for rendering support service - complied/not complied
5. **Service center:** Details of service center location/engineers working.
6. **Acceptance of tenders:** No tender will be accepted after due date. ECIL will not be responsible for postal/courier delay or lost in transit if any.

Note: vendor shall provide documentary proof to prove his adherence to the qualifying criteria where ever necessary. Claims without support will not be considered.

GENERAL TERMS AND CONDITIONS

This tender and any order resulting from this tender shall be governed by the following terms and condition of contract and the supplier quoting against this tender shall be deemed to have read and understood the same. In case counter terms and condition of business have been offered by the supplier, ECIL shall not be deemed to be governed unless specific written acceptance thereof has been obtained from ECIL.

- 1. Terms of prices:** Quotations shall be submitted on FOR Hyderabad or FOR destination basis including transit insurance. In case of Ex-works / Ex-go down / FOR dispatching station the approximate packing, forwarding and freight shall be indicated by the suppliers. Hyderabad suppliers shall arrange free delivery at our stores.
- 2. Validity of quote:** The quotation shall remain valid for a minimum period of 90 days from tender opening date.
- 3. Performance Bank Guarantee:** Vendor shall submit a performance bank guarantee for 10% of purchase order value covering standard free warranty period of one year from the date of acceptance of goods by ECIL.
- 4. Payment:** Payments for materials and services will be made within 60 days from the date of acceptance of goods and services on pro-rata basis by ECIL.
- 5. Insurance:** The supplier shall insure goods for all transit risks if the payment term is FOR Hyderabad or FOR destination unless otherwise stated specifically by the supplier in their quotation. The supplier shall insure goods for all risks till acceptance of goods by End user.
- 6. Liquidated damages:** Delivery date is the essence of the contract. In the event of any delay in supply beyond the agreed delivery schedule, liquidated damages will be recovered @0.5% per week of delay or part thereof subject to a maximum of 10% of the value of the order.
- 7. Force majeure:** If the execution of the purchase order is delayed beyond the period stipulated in the purchase order as a result of outbreak of hostilities, declaration of an embargo or blockage or fire, flood, acts of nature or any other contingency beyond the supplier's control due to act of God, then ECIL may allow such additional time by extending the delivery period as justified by the circumstances of the case and its decision in this regard shall be final. Power failure will not be considered as a force majeure condition.
- 8. Risk purchase:** In case of failure to deliver the goods within the delivery date stipulated in the purchase order unless prior extension of delivery period is obtained, ECIL will be at liberty to obtain such items as necessary from other source and / or cancel the order and in either case ECIL reserves the right to recover from the supplier the additional amount spent plus 10% to cover incidental expenses.
- 9. Dispute resolution:** Any dispute arising out of purchase order or interpretation of any clause or terms and conditions hereof shall be settled through conciliation by both ECIL and the supplier, under the specific provision of arbitrational and conciliation act 1996. Only courts in Ranga Reddy district, state of Andhra Pradesh, India have exclusive jurisdiction over this order.
- 10. Right to reject:** The purchaser reserves the right to reject any or all offers wholly or in part without assigning any reason.
- 11. Short closure:** ECIL has the right to short close the tender even after evaluating the quotations without assigning any reason.

12. Bank details: The supplier shall give along with the quotation name of their banker, account number and also income tax permanent account (PAN).

13. Jurisdiction: All disputes arising in connection with executing the purchase order will be subject to jurisdiction of the courts in Hyderabad and Secunderabad only.

TECHNICAL DOCUMENT

Real Time Spectrum & Signal Analyzer specifications

S. No	Parameter	Specification
1	Frequency Range:	10Hz to ≥ 7 GHz
2	Mode of operations	Real Time mode and Signal & Spectrum Analyzer Mode
Real Time Mode		
3	Frequency Span	100Hz to 40MHz
4	Resolution	1Hz
5	Sweep Resolution	4 μ sec
6	Sweep Range	52 μ sec to 1 sec
7	Sampling rate	128M samples/sec
8	A/D resolution	16bit
9	Spectrum Rate	2,50,000 spectrums/sec
10	Minimum detectable signal	25nsec
11	Resolution Bandwidths	1Hz to 400KHz
12	Amplitude uncertainty	± 0.8 dB
13	Spurious free dynamic range at 40MHz span	< -70 dBc
14	Display Modes	real-time spectrum, persistence spectrum, real-time spectrogram, power vs. time, power vs. time waterfall
15	Hopper detection	minimum 1100hop/sec, should be able to measure hop length
16	Trigger modes	frequency mask, time domain trigger, external
Signal & Spectrum Analyzer Mode		
17	Frequency Range:	10Hz to ≥ 7 GHz
18	Aging rate	1×10^{-6}
19	Marker resolution	1Hz
20	Frequency Count resolution	0.001 Hz
21	Inbuilt Attenuator Range	0 dB to 75 dB
22	Resolution bandwidth (RBW)	1 Hz to 10 MHz,
23	Resolution bandwidth (RBW) in Zero span	20MHz,40MHz
24	Video Bandwidth (VBW)	1 Hz to 10 MHz
25	FFT Filters	1 Hz to 300 KHz
26	Channel Filters	100Hz to 40 MHz
27	Sweep time, span ≥ 10 Hz:	7 μ s to 16000s

28	Analyzer should be able to do faster measurements with low Resolution Bandwidth:	
29	Measurement Speed:	
	Local measurement and display update rate	900/sec
	Remote measurement and LAN transfer rate	350/sec
	10MHz Span, 1KHz RBW, normal sweep	< 1sec
	10MHz Span, 1KHz RBW, FFT Sweep	< 1.8 msec
30	SSB Phase noise at 500MHz/1GHz, typical	Offset Phase noise 100 Hz < -90 dBc/Hz 1 kHz < -101 dBc (1 Hz) 10 kHz < -110 dBc (1 Hz)
31	Displayed Average Noise Level, f> 2MHz	-155 dBm
32	No. of Spectrum windows	Upto 4 Measurement Windows with independent analyzer settings
33	Audio Demodulation	AM, FM
34	Vector Signal Analysis:	
	IF frequency response (center freq. <= 7GHz)	< 0.3 dB (phase 1 degree)
	Triggering	free run, IF Power
	Modulation Formats	2FSK, 4FSK, MSK, GMSK, DMSK, BPSK, QPSK, Offset-QPSK, DQPSK, 8PSK, D8PSK, $\pi/4$ -DQPSK, $3\pi/8$ -8PSK, $\pi/8$ -D8PSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
	Bit Error Rate Tester	In built to signal analyzer should be available
	Filter types(transmitt)	RC, RRC, Gauss, GMSK, half sine, rectangular, User definable filter
	Filter types(measurement)	RRC, rectangular, low ISI filter, user definable
	Roll-off factor/BT	0.1 to 1
	I/Q Bandwidth	≥ 40 MHz
	Display formats	magnitude/time, I/Q/time, absolute frequency/time, EVM/time, magnitude error/time, phase error/time, polar, eye diagram,
	Residual Error(EVM) at span <= 100KHz, 1MHz, 10MHz	< 0.5%
35	VSWR, typical	
	RF Attenuation ≥ 10 dB	< 1.8
36	1 dB compression of input mixer, nominal	+ 3dBm
37	TOI	> + 12 dBm
38	Total Absolute amplitude accuracy, at 10dB, 20dB, 30dB RF Input attenuation, input signal 0dBm to -70 dBm	
	$9 \text{ kHz} \leq f < 7 \text{ GHz}$	$\pm 0.4 \text{ dB}$

39	Interfaces	GPIB, LAN, USB
		Ref. Input & Output
		External Trigger, IF out, Video Out, Demod out, trigger out
		External Monitor (VGA) Connector
40	Maximum Safe input level	+ 30 dBm, 40V
41	Trigger Source	external, IF power
42	Input Connector	N female, 50ohm
43	Probe power: Voltage/current	+15 V DC, –12.6 V DC and ground, max. 150 mA
44	Noise Source Drive, to do Noise Figure measurements	0V/28V, switchable, BNC female.
45	EMC	in line with IEC/EN 61326-1, CISPR 11/EN 55011
46	Safety	in line with EN 61010-1, IEC 61010-1
47	Weight	< 14 Kg, less weight preferable as the analyzer will be taken to field as well.
48	Future upgradability	Analyzer should be future upgradable for Noise Figure measurements, power measurements with power sensor, phase noise measurements
49	Training	Hands on Training at ECIL needs to be provided for five persons for five working days
50	Warranty	One year Standard Warranty and Two years extended warranty