

Department of Information Technology
BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR
Howrah -711103

A Project on “Development of High Power and Spectral Efficiency Multiuser System for Broadband Wireless Communication”

(Univ. Project code: DIT/IT/SPM/13/08-09)

Notice Inviting Quotations

Sealed quotations are invited from *bonafide* suppliers for supply of a **Signal /Spectrum Analyzer for a Ministry of Communication and Information Technology, Dept. of Information Technology, Govt. of India project**. Details are available from the downloadable format available in the university website (www.becs.ac.in). Last date of submission of bid is **24th February, 2010** up to **3.00pm.** in the department of Information Technology , BESU, Shibpur along with payment of Rs. 200/- by DD drawn in favor of **“The Registrar, Bengal Engineering and Science University, Shibpur”** payable at **Kolkata**.

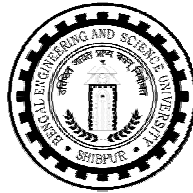
Registrar

(A. Code DRC-T010/09-10)

Downloadable

BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR
(Formerly Bengal Engineering College, Howrah)

P.O. Botanic Garden, Howrah – 711 103, West Bengal, India



BIDDING DOCUMENT

For Supply of

Signal/Spectrum Analyzer

Under a **MCIT Project**

Sponsored by

**Ministry of Communication and Information Technology, Dept. of
Information Technology, Govt. of India**

at Department of Information Technology, BESU, Shibpur

Univ. Project Code: DIT/IT/SPM/13/08-09

February 15, 2010

(A. Code DRC-T010/09-10)

SECTION I: TERMS & CONDITIONS AND IMPORTANT INSTRUCTIONS FOR BIDDERS

1. Bidders are to collect the tender documents with technical specifications for tendered item from the university website (www.becs.ac.in) and submit quotations as per instructions in the document. Bidders shall have to submit a non-refundable processing fee of Rs. 200/- (Rupees two hundred only) by a separate DD drawn in favor of "**The Registrar, Bengal Engineering and Science University, Shibpur**" payable at **Kolkata** along with a letter forwarding the bid.
2. The last date of receipt of tenders is 24th February 2010 up to 3.00 p.m in the Department of Information Technology, BESU, Shibpur. Tenders received later will not be entertained under any circumstances.
3. Date and time of opening of bid is 25th February, 2010 at 3.00 p.m. and the place of opening is Department of Information Technology, Bengal Engineering and science university, Shibpur, Howrah-711103
4. Bidders are to submit the tenders in Sealed Cover to the Dept. of Information Technology:
 Dr. S. P. Maity,
 Principal Investigator, Ministry of Communication And Information Technology,
 Dept. of Information Technology, Govt. of India, Project
 At Department of Information Technology, Bengal Engineering and science university, Shibpur, Howrah-711103.
5. All bids will be submitted in TWO-BID Format in separate sealed covers (Enquiry Number must be mentioned in both covers).
 - (i) **PART I: TECHNO-COMMERCIAL BID** - giving Detailed Specifications, International Standards (BIS/INTERNATIONAL), Catalogues, List of users & Technical Details / Operating Parameters, Pre-Installation Requirements, payment terms, warranty, etc.
 - (ii) **PART II: PRICE BID** - giving full Prices in Indian Rupees and/or in Foreign currency for
 - (a) Main Equipment.
 - (b) Essential Accessories & Spares.
6. All Vendors / Agents must submit full details and requirements for Installation & Commissioning of the Equipment as per Technical Specifications submitted by them.
 - (i) Power Supply specification
 - (ii) Oscilloscope
 - (iii) Spectrum analyzer for frequency information
 - (iv) Connectors
7. Materials & Accessories supplied should be as per specification and finally approved by any authorised Officer of the Bengal Engineering and Science University, Shibpur, Howrah.

8. The manufacturer selected shall provide Training in operation and application of the Instrument for the R&D work to user Scientists/SRF at BESUS.
9. Installation & Commissioning will be the sole responsibility of the Supplier / Indian Agent.
10. The price quoted should be inclusive of all Taxes, duties and levies. Inclusion of Tax/Levy at a latter stage will not be accepted. Freight, Insurance charges should be clearly indicated. For imported equipment, Letter of Credit may be opened against proforma invoice received from the Principal Vendor. In case of imported equipment the local agents are to quote the price in foreign currency.
11. The materials are to be supplied at a place within BESUS premises between 11.00 a.m. and 4.00 p.m. The tenderer will be responsible for any breakage, damage or defect in the equipment detected subsequently. The supply and installation of the equipment should be completed within a period not exceeding 2 months from the placement of the formal work order or opening of the LC, failing which appropriate action will be taken as per university rules.
12. If the supply is not completed within the stipulated period as indicated in the Work Order, a Liquidated Damage @ ½ per cent per week will be imposed subject to maximum of 5% of the value of work order.

13. (a) For Indian purchase (*This clause is applicable only for Indian purchase and not applicable for foreign purchase*):

Bills in triplicate should be presented for payment within 15 days of Supply / Completion of work. No Advance Payment can be made. All bills are to be accompanied by Order copies and Challan Receipt. The Order Number is to be noted on both the Challan and the Bill. **Or**

- (b) For Foreign purchase (*This clause is applicable only for foreign purchase and not applicable for Indian purchase*):

Payment will be made through Letter of Credit/Bank Transfer. AWB, Packing list, Warranty certificate, etc should be provided.

14. **Earnest Money Deposit**

- a) Earnest money deposition @ 2% of the quoted price in the form of Demand Draft / Pay Order drawn in favour of the “**Registrar, BESU, Shibpur**” and payable at **Kolkata** shall have to be paid together with the Price Quotation, failing which, unless otherwise exempted by any rule, shall not be entertained.
- b) Tender has to be kept valid for acceptance for a period of 6 months without any modifications in its terms and conditions. Failure to comply with the same, the authority may forfeit the Earnest Money Deposit.
- c) Earnest Money Deposit of the successful bidders will be converted to Security Deposit.

- d) Earnest Money Deposit / Security Deposit will be refunded after successful completion of supply or after expiry of Guarantee period. No interest is payable on Earnest Money Deposit / Security Deposit.
- e) Bidders shall submit self-addressed envelope affixing postal stamp of Rs.25/- for release of Earnest Money Deposit.

15. **Documents to be submitted with the tender:**

- a) Tender Documents/Terms & Conditions in Original duly signed by the Proprietor/ Partner/ Director of the Company as a token of acceptance of Terms & Conditions of Tender.
- b) Latest Income Tax, Sales Tax, Professional Tax Clearance Certificates and copy of Valid Trade License. (This clause is applicable only for Indian purchase and not applicable for foreign purchase)
- c) Demand Draft/ Pay Order for Earnest Money Deposit.

16. **Customs Duty & Excise Duty**

- The University will not issue any C or D form availing of concessional Sales Tax/ VAT.
- The University will issue Customs Duty Exemption Certificate or Excise Duty Exemption Certificate for foreign purchase, if required.

17. **Warranty:**

- Warranty/guarantee for all the items of equipment/furniture supplied shall be on 'all comprehensive' basis (i.e., including repairs, replacements, maintenance, etc.).
- The minimum applicable period of all comprehensive warranty for all items of **equipment and furniture** shall be **36 (thirty six) months** from the date of acceptance by the University.

18. **Bengal Engineering and Science University, Shibpur, Howrah reserves the right to accept / reject all or any of the tenders without assigning any reason whatsoever.**

We accept the above terms and conditions.

Dated:

Signature of Bidders/Suppliers

With date & Seal

SECTION II: TECHNICAL SPECIFICATIONS

Technical Specifications of Items (Equipment/Software)

Item 01. Signal/Spectrum Analyzer

01 No

APPLICATION:

The item will be utilized for verification of Receiver operation in MC-CDMA (Multicarrier-Code division multiple Access), WCDMA and QAM system.

Specifications for Spectrum Analyzer:

Frequency	9 kHz to 3.6 GHz
Frequency reference	
Aging Rate	$\pm 1 \times 10^{-6}$ / year
Frequency Span (FFT and Swept mode) instrument	zero span, 10Hz to maximum frequency of instrument
Sweep Time	
Span ≥ 10 Hz	1ms to 4000s
Triggering Options	Free run, line, video, external 1, external 2, RF Burst, Periodic timer.
Sweep Points (full range)	1 to 20001
Resolution Bandwidth	1 Hz to 3 MHz (10% steps), 4, 5, 6, 8 MHz
Analysis Bandwidth	10 MHz
Markers	12
Video Bandwidth and wide open	1 Hz to 3 MHz (10% steps), 4, 5, 6, 8 MHz
Display	XGA
Maximum safe input level range	+30 dBm
I/P VSWR	<1.2:1
DANL (Noise Floor) Preamp	-148 dBm (10 MHz to 2.1 GHz) without
One - button power measurements	Channel Power, Occupied Bandwidth, Power Statistics CCDF, Spurious Emission, Spectrum Emission Mask (SEM)
Vector Signal Analysis demodulators EDGE,	AM/FM/PM/ FSK-2,4,8,16 level, MSK,

Software should run on this Spectrum Analyzer	QAM – 16, 32,64,128,256,512,1024, APSK,
Vector Signal Analysis Display Formats Q versus time	Polar diagrams – constellation and vector, I- – I or Q only, Eye diagram Trellis diagram,
EVM, Errors	Table, Symbol Table. Upto 6 displays simultaneously
Temperature Range	Operating 5 to 50 deg C
Power Requirements	195 to 250 V, 47 to 66 Hz
Storage	Internal 40 GB hard disk
Operating System	Open Windows XP
Connectivity	GPIB, LAN, USB, VGA out
RF Input Connector	Type N (female), 50 Ohms