Subject: Inviting quotation for “Fabrication of 3U Rack with PCB and instrumentation for Modbus based 20 channel TTL Pulse generator, 10 channel pulse width measurement with 80 MHz clock detailed specification as per ANNEXURE A.”

Dear Sir,

On behalf of the President of India, you are invited to quote for “Fabrication of 3U Rack with PCB and instrumentation for Modbus based 20 channel TTL Pulse generator, 10 channel pulse width measurement with 80 MHz clock detailed specification as per ANNEXURE A.” Terms & conditions are given below.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description of the Job</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>1.</td>
<td>“Fabrication of 3U Rack with PCB and instrumentation for Modbus based 20 channel TTL Pulse generator, 10 channel pulse width measurement with 80 MHz clock detailed specification as per ANNEXURE A.”</td>
<td>1 No</td>
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Terms and Conditions:

1. The supplier should quote for fabrication of the items, including the cost of the materials.
2. The material will be inspected before the start of the fabrication.
3. The quotations should have the minimum validity period of two month.
4. BARC being a Government organization is exempted from payment of excise duty and Octroi duty. However, excise duty exemption / Octroi duty exemption certificates will be issued if required. Sales Tax @ 12.5% VAT will be applicable. Income tax @ 3% & surcharge as applicable on IT will be deducted from your bill.
5. Supplier should submit their offers in their (via speed post) letterhead, placed in sealed envelope super scribed with the above mentioned Reference No., due date and Title Inviting quotation for “Fabrication of 3U Rack with PCB and instrumentation for Modbus based 20 channel TTL Pulse generator, 10 channel pulse width measurement with 80 MHz clock detailed specification as per ANNEXURE A.” addressed to Head, IADD, BARC, Trombay, Mumbai-400085, on or before Before 14:00 hours). The quotation should contain the following details like (i) Period of validity, (ii) terms and conditions of offer, (iii)
Approximate period of completion of job, (iv) Copies of registration and income tax clearance certificates.

6. The item shall be subjected to inspection by our Scientists / Engineers at the supplier’s works. Necessary inspection facilities should be provided to them during fabrication at the supplier’s premises. Additional charges will not be admissible for such minor modifications, if any. The item should be delivered to us at Van De Graff Extension building, IADD, BARC after approval by our Scientists / Engineers.

7. Please note that shorter delivery period will be preferred. For any clarifications you may contact, Kewlani Hitesh / S. H. Gharat IADD, BARC on Tel. 25592070/25593742.

8. Payment will be made only after delivery and installation of the item to the above-mentioned address and approval by our Scientists / Engineers as per BARC rules.

Dr. S. Krishnagopal
Head, IADD, BARC.
ANNEXURE A

Subject: “Fabrication of 3U Rack with PCB and instrumentation for Modbus based 20 channel TTL Pulse generator, 10 channel pulse width measurement with 80 MHz clock detailed specification as per ANNEXURE A.”

1. 4-Channel 4 MHz to 80 MHz high precision ultra-low jitter TTL Clock Generator with phase control
2. Main features all with 80 MHz clock support
   a. 20 channel 20 channel TTL Pulse generator
   b. 10 channel pulse and frequency counter
   c. 16 high speed counter
   d. 12 pair of quadrature input
      Above functions are developed using 4 Modbus enabled Ethernet based multifunction DAQ Device with following specification
      a. 16-bit 14 Analog Inputs up to 100k samples/s.
      b. Software Configurable Resolution Settings
      c. Single-Ended Inputs (14) or Differential Inputs (7)
      d. Analog input ranges: ±10V, ±1V, ±0.1V and ±0.01V
      e. 2 Analog outputs (12-bit, 0-5V)
      f. 23 Digital I/O
      g. Supports SPI, I2C
      h. 5 PWM Outputs with individual phase control
      i. 5 Pulse Outputs with configurable number, frequency, and width
      j. 2 Frequency Inputs returning both frequency and period
      k. 4 High-Speed Counters
      l. 6 Software Counters with denounced capabilities
      m. 3 Pairs of Quadrature Inputs
      n. Ethernet Communication
      o. Capable of stand-alone operation by running as PLC
      p. CJC Temperature Sensor for easy thermocouple temperature readings
      q. Watchdog system
      r. Field Upgradable Firmware
      s. Programmable Start-up Defaults
      t. Industrial temperature range (-40 to +85C)

3. All TTL outputs will be separated with the help of high speed (min 150 Mbit/Sec) digital isolator (min 5 KV Isolation).
4. Various parameters for these 20 TTL Outputs (like frequency, on time off time etc.) will be controlled via user interface through Modbus TCP IP protocol
5. All the above mentioned units along with the necessary power supply should be housed in a 19 inch 3U aluminum power coated rack. With design and dedicated Printing as per user instruction and approval.
6. 25 BNC connector, 5 SMA should be brought to the back side of enclosure for easy access.
7. Terminal block adaptor with cable for DI, DO, AI, AO at the back plate.
8. Back side should also contain AC on/off switch with EMI EMC filter of minimum 5A ratings.
9. Complete wiring with tagging and labeling and testing in in the scope of the supplier.
10. 3 year Warranty against any manufacturing defect.

NOTE

[1] Minor change in the order will be as per system requirement while installation.
[2] Quote for all the items individual item quote are note accepted.
[3] Replacement Warranty: 3 years