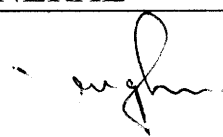
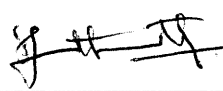
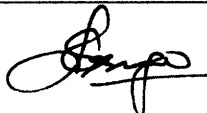




## TECHNICAL SPECIFICATION FOR BOUGHT OUT ITEMS

|                          |                                                                                                                                                                                                                                                                                |                                                                                     |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Reference No.            | Rev No.                                                                                                                                                                                                                                                                        | Effective Date                                                                      |
| TEP:NTPC:PC:027          | 06                                                                                                                                                                                                                                                                             | 17.12.2015                                                                          |
| Title                    | TECHNICAL SPECIFICATION FOR INDUSTRIAL COMPUTER                                                                                                                                                                                                                                |                                                                                     |
| PROJECT                  | NTPC / GENERAL                                                                                                                                                                                                                                                                 |                                                                                     |
| Prepared by              | Varghese Paul                                                                                                                                                                                                                                                                  |  |
| Reviewed by              | S Parthasarathy                                                                                                                                                                                                                                                                |  |
| Approved by              | V S Suresh Kumar                                                                                                                                                                                                                                                               |  |
| Issued and Controlled by | Electronic Shop<br>EDC/ Embedded Systems<br>BAP/BHEL/Ranipet-632 406                                                                                                                                                                                                           |                                                                                     |
| Document Status          | <input type="checkbox"/> Information Copy<br><input type="checkbox"/> Controlled Copy<br><div><p>* It is a control copy only if the mark against the control copy is other than black colour, otherwise it will be an uncontrolled copy. Check for current revision.</p></div> |                                                                                     |
| Issued to:               | Control Copy No:                                                                                                                                                                                                                                                               |                                                                                     |

**TECHNICAL SPECIFICATION FOR ANALOG INPUT MODULE**

| Reference No.    | Revision No. | Effective Date |
|------------------|--------------|----------------|
| TEP:NTPC:PC: 027 | 06           | 17.12.2015     |

**Record of Revision**

| Rev. No. | Effective Date | Remarks                                                        |
|----------|----------------|----------------------------------------------------------------|
| 00       | 21.01.04       | Original Document                                              |
| 01       | 26.06.05       | PC Configuration changed.                                      |
| 02       | 05.09.06       | PC Configuration changed.                                      |
| 03       | 03.01.08       | PC Configuration changed.                                      |
| 04       | 17.04.09       | Configuration revised and Hard disk partition method included. |
| 05       | 23.06.11       | PC Configuration changed as well as Dept. Name changed.        |
| 06       | 17.12.15       | PC Configuration changed.                                      |

**SCOPE:**

The scope of supply includes design, manufacture, testing, packing and delivery of the industrial grade computers (SBC) as per the following technical data. The bidder shall specifically confirm point –wise and enclosed ANNEXURE shall be submitted along with the offer.

**TECHNICAL INFORMATION**

- IPC Chassis with Passive Back Plane & Single Board Computer
- 24 inch TFT LCD color monitor as specified in the indent/ enquiry.
- 101 mechanical key board and Mouse.

**TECHNICAL DATA FOR INDUSTRIAL PC**

- A. 4U height rack mount chassis with
  - Versatile power supply option
  - Cooling fan with filter of sufficient capacity
  - ATX mother board option
- B. Passive backplane with suitable desktop chassis with minimum 8 ISA slots and 4 PCI slots (6 ISA slots shall be free for BHEL use and shall not have any hindrance for inserting ADDON cards of length 330mm approx).
- C. Minimum 400 W power supply (SMPS- Industrial version).
- D. SBC add-on processor card consisting of:
  - i. Intel Core 2 Duo Processor with 2GHz Minimum or Higher version
  - ii. DDR2 RAM of 4GB minimum
  - iii. SATA interface to support minimum 4 nos of SATA drives
  - iv. 1 x 10/100 Onboard Ethernet facility
  - v. 2 Serial port (should be possible to disable from BIOS)
  - vi. One Parallel port
  - vii. Four nos. of on board USB ports (Minimum 2 nos. front accessible)
  - viii. Necessary driver software and documents
- E. One SATA CD/ DVD ROM drive.
- F. One SATA HDD with 1 TB minimum
- G. Dummy covers for covering the CD-ROM bays shall be supplied loose, as they may be removed depending upon our requirement
- H. Windows XP Professional 32 Bit (original Licensed version) in CD-ROM / DVD
- I. 101 mechanical key board- 1 no
- J. USB based Optical mouse -1 no
- K. 24" LCD TFT Color monitor / Equivalent

**NOTE:**

1. Portion of Hard disk -25% of hard disk shall be partitioned as 'C' drive and remaining portion of Hard disk in the next D and E drives.
2. Windows XP Professional OS (32 Bit) shall be loaded in the system and to be activated before offering for inspection.

**ENVIRONMENTAL INFORMATION****Ambient conditions:**

Ambient temperature: 6 °C to 45 °C

Humidity: Max 95% non-condensing

Location: Indoor

**INSPECTION AND TESTING**

The SBC shall be tested with inspection software like QAPLUS, AMIDIAG Etc which checks all the hardware inside the IPC.

The inspection will be carried out at supplier's works by BHEL/BHEL authorized inspector, based on the following documents.

- a. BHEL purchase order.
- b. BHEL Technical specification.

**PACKING**

The equipment shall be properly packed so as to prevent them from damage during transit/storage. Necessary provisions / marks for handling shall be provided. Each packing shall contain a packing slip showing all components, Instruction manual, name of the supplier, brief equipment description, purchase order number, relevant test certificate, serial number of the equipment and destination address.