

PVMS OF MEDICAL EQUIPMENT

Clinical Specialty	Radiological Equipment
Generic Name	Whole body Multi Slice CT Scan 128 Slice
Clinical Purpose	It is used in cases of head trauma, bone diseases, abdominal and chest imaging as well as staging of tumors and gastrointestinal studies.

TECHNICAL SPECIFICATIONS

GANTRY

System should be capable of Acquiring /Generating 128 slices per gantry rotation in real time. Gantry bore / aperture to be at least 70 cm or more.
Minimum gantry rotation time to be at least 0.35 seconds or better, for 128 slices per 360 degree rotation, for all applications.

All the firms should quote their latest model scanner with shortest rotation time Breath holding time 05 sec or less in cardiac scan.

System should be able to acquire helical OR sequential scan with the gantry tilted from the vertical.

Gantry tilt range must be + 30 degree.

Maximum scan field of view to be at least 50 cm. For Paeds & Children the system should be able to reduce the field of view to 250 mm.

Minimum slice thickness 0.625 mm or better in Helical mode.

Dual Control (including tilt,) of gantry and table from the gantry-housing and console.

TUBE

Heat storage capacity of at least 7 MHU or better. Generator output of up to 550mA or more. Active collimation during scanning.

GENERATOR

High frequency power generator with minimum power of at least 70 KW or more should be capable of variable kV setting in steps from 80 to 135/140 KVP.

Should have ability to vary the power (mAs) automatically in steps Real-time dose reduction hardware / software and with ECG modulation Iterative dose reduction must be offered.

Low contrast detect ability (LCD) calculated on a CATPHAN 20 cm, of 5 mm resolution with a CT No. of 3 HU (0.3 %) or better, contrast difference

Scan Length of at least 1.7 meters or more of helical or axial scan in a single acquisition. Maximum Scan Time 100sec. or better.

DETECTORS

Solid state crystal / ceramic detectors with conversion efficiency (x-ray to signal strength) of nearly 98% latest technology.

Isotropic voxel size of 0.35 mm or better, in all three axis.

Minimum 64 Detectors and detector electronics capable of providing 128 slices per gantry

rotation.

Detectors width 38 mm or more.

COUCH

Dual motorized control (from console and gantry) of table movements in horizontal and vertical axis.

Maximum weight allowed on the couch up to 200 kg or more Horizontal movement speed up to 100 mm per second.

Single acquisition scan range of at least 1.8 meter.

Scan with at least 0.25 mm accuracy / reproducibility on a 200 kg patient. Lateral movement table.

CONSOLE COMPUTER

System architecture and operating system must be based on latest technology. (64 bit RISC or Dual Xenon Processor PC) original.

Multitasking and parallel processing CPU system. At least 8 GB RAM or more
Hard disc capacity for image storage of at least 500 GB or more.
Capable of storing at least 3000 raw data files / rotations or 700 GB raw data / 450000 images in 512 x 512 format.
Reconstruction of at least 25 images FRAMES per seconds or better at 512 x 512 matrix. Image area display matrix dimensions (1024 x 1024).
Console color monitor (X 02), LCD of at least 19 inches, medical grade with maximum viewing angle.
DVD and CD writer

SOFTWARE:

- a.All the latest whole body & cardio-vascular software should be supplied as standard which is available at the time of shipment original with their part No of company.
- b.USER INTERFACE SOFTWARE True isotropic volume acquisition
- c.Prospective and retrospective ECG gated acquisition
- d.Variable Delay algorithm like fixed percent delay (FPD) and fixed offset delay (FOD) or
- e.better, for selection of period of least motion in cardiac cycle (temporal resolution of 44 milli second or less will be preferred)
- f.Automated contrast media bolus tracking software.
- g.3D Reconstruction Display Original Company Software.
- h.Maximum and minimum intensity projections
- i.Multi-planer and curved planer reconstruction
- j.3D shaded surface display
- k.3D volume rendering software
- l.3D virtual endoscopy, colonoscopy with lumen / fillet view /electronic cleansing / auto segmentation of the colon and bronchoscopy.
- m.3D cone beam correction.

CT Angiography:

- a.Basic Comprehensive Brain perfusion analysis.
- b.Image reconstruction Automatic real time dose adjustment according to the body

attenuation i.e. core 4D dose/longitudinal dose workstation/ 40 boost/ sure exposure 3D/ organ specific dose modulation or similar.

- c.Artifact reduction algorithm.
- dAutomatic control of tube current over high and low attenuation areas for patient dose reduction software for low dose to patient original / certified.
- e.Iterative Dose Reduction Software.
- f.Bone removal software.
- g.Mattell artifact reduction software.
- h.Dental CT
- i.optimal dual energy to be separately quoted.

WORK-STATION- thin client server (03 license users)

Independent, automatic multimodality, fully functional. All companies will supply the Work-stations by the manufacturer that they provide world-wide as a standard. Work-stations will be supplied from manufacturer of CT to ensure similar work flow.

High speed link to operator console on DICOM network System architecture and operating system

- a.Dual processor Xeon
- b.2.66 GHz or more speed
- c.512 cache or more

d.Graphic card and network card

Original Licensed software: Window XP/7/8 or Linux, MS Office 2013, Norton / equivalent antivirus (current and upgradeable for at least for the time of warranty)

Should have at least one high resolution LCD monitor (medical grade as recommended by the manufacturer) of 18 inch or more

DVD RW (super-drive will be preferred)

DICOM-3 viewer with universal PC display capability (licensed)

WORKSTATION SOFTWARE

(original with certificate) with thin client, server with three concurrent users).
Software up-gradation of all existing applications for at least next 05 years will be provided free of cost.
Following software will be provided at the workstation of the same origin as are being used in
USA/EUROPE & JAPAN. 3D Reconstruction display.

- a. UPS 3 KVA (x 03), Branded, dry battery capable of providing 20 minutes of back-up for workstations (MG, APC, MC, Chloride, Riello, Emerson). The dry batteries will be included in company warranty.
- B. Heavy duty Laser black and white printer (qty: 3) A4 /letter size 2400 dpi or higher, two paper trays for A4/ letter size media, (HP, Lexmark, Xerox, CANNON) network-ready DICOM
- c. DICOM 3 ready (multi-vendor and multimodality compatible for send, receive, achieve, retrieve and print, on main console and workstations).

UPGRADE-ABILITY

All vendors will quote their latest and best system.
The system should have a software upgrade route to higher versions with undertaking of above two by the principal manufacture, that is their latest version been used in USA/EU & Japan.

POWER REQUIREMENT

Three phase with line voltage of 380-440V, 50Hz.

ACCESSORIES: (Procuring agency to select as per its actual requirement)

Programmable, dual head power injector with flow/volume and temperature control. Mounted on mobile base, with 500 syringes of 150 ml capacity and connecting tubes (Medrad, Medtron / Mallen, Nemoto).
DICOM 3 ready dry laser camera / imager, Multi-size up to 14 x 17 in. (Agfa, Fuji, Kodak/Carestream, Konica) for black and white printing on films including 5000 films.
FILM VIEWER (x 08) for images up to 14 x 17 inch with variable light control and shutters for control of viewing area, with 04 x 1 format MEDICANVAS, MAVIA
On-line sine wave UPS for whole CT suite, with a minimum back-up time of 30 minute on full load including air-conditioning system.
Air conditioners Two Ton each for UPS room office and waiting area lights/fans etc.

Protection devices:

Lead aprons with hangers. 03 Nos
Lead-gloves 03 Nos
Lead goggles 03 Nos
Thyroid Shields all 0.5 mm lead equivalent European & Japanese. 03 Nos
Lead glass for control room , 0.5 mm lead equivalent.
Standard set of Phantoms for calibration of CT
Pediatric scanning package - software and hardware original.
Cardiac defibrillator. 01 No
Dedicated Cardiac Monitor for synchronize with cardiac scan. 01 No
Pulse oximeter. 02 No
ECG machine, multichannel (three channel) 01 No
Cardiac Resuscitation trolley completely equipped with all necessary items. 01 Nos

TABLE ACCESSORIES – Table pads, arms rest, patient restraint kit, IV pole, infant cradle, flat head holder, ceiling mounted hand holder patient (original accessories from the vendor) Digital Transcription system for reporting (hand held units – x 03, and Complete steno-typedesktops unit (x 02)

OPTIONAL:

Fat software OR Equivalent.

SITE PREPARATION/INSTALLATION:

Complete Site renovation of CT, Console and UPS room, including lead shielding of the CT room and doors, Air-Conditioning, False ceiling, painting, Antistatic flooring,
Electrical DB, Earthing and Power cable from Main Transformer / Hospital

LT Panel Will be the responsibility of the supplier. The installation will be a turnkey project and any modification in the existing site will be the responsibility of the firm. The firm will be responsible for complete interface free installation keeping in view the requirement and recommendation of manufacturers and its surroundings to ensure artifacts examinations/procedures.

Transformer 200 KVA, and Generator 200 KVA also Responsibility of Firm.

Training : Firm will be Responsible to the onsite training of the Technician and Allied Staff through their Engineer for One Month at least . Foreign Training of Consultant / Radiologist / End user and bio-medical enigneer will be responsibility of firm.

Note: (Procuring agency to specify, if required)

The firms may additionally quote advanced available applications / packages / Software's for neuro, vascular / angiography, oncology, brain etc separately as optional (which will not form the basis of acceptance / rejection)



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