

STL- WAREHOUSE- JB  
V. A. Medi cal Center  
VA MED CENTER, BLDG#8  
1 JEFFERSON BARRACKS DR  
ST LOUIS, MO 63125- 419

657- B50017

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Qty	Item Description
1	<b>Symbia S Series</b> The Symbia S is a dual variable SPECT camera that can be field upgraded to a Symbia T SPECT•CT system.
1	<b>Symbia S</b> The Symbia S is a variable angle dual detector emission imaging system with a pass through open gantry design for fast data acquisition to achieve high patient throughput during SPECT, Whole Body and general purpose procedures or optimized Cardiac SPECT applications.  The Symbia S can be upgraded to one of the Symbia T Series SPECT•CT models, T, T2, T6 or T16.
1	<b>Additional System Manuals</b> Additional user manual for the above selected MI system.
2	<b>3/8" Hi-Resolution Detector</b> The high resolution, digital detector assembly includes a .95 cm (3/8 in.) thick NaI (TI) crystal.
1	<b>Detector Support with Caudal Tilt</b> Caudal tilt on Detector 2 allows for precise positioning of static and dynamic acquisitions.
2	<b>Low_Energy_Hi_Res Collimator Symbia</b> Low energy (140 keV), high resolution, parallel hole collimator
2	<b>Medium Energy Collimator Symbia</b> Medium energy (300 keV), parallel hole collimator
2	<b>High Energy Collimator Symbia.</b> High energy (364 keV) parallel hole collimator
1	<b>Pinhole Collimator Symbia</b> Pinhole collimator with a 4mm aperture
1	<b>Productivity Package</b> B-Text The productivity package automates collimator exchange and quality control to improve the productivity of the Symbia S and Symbia T camera systems.
1	<b>AQC Web Based Training</b> AutoQC web based training is available on the Siemens training website.

Qty	Item Description
1	<b>AutoQC Source Registration Kit</b> Source registration kit for Symbia Automatic Quality Control option. This kit contains information on updating site radioactive materials license, contact information for source vendor, and user instructions.
1	<b>AutoQC source kit</b> This source kit contains includes 1 - Gd-153 line and 1 - Co-57 point source required for the automatic quality control option.
2	<b>Symbia Collimator Cart</b> The collimator cart is designed to hold extra collimators and allows collimator exchange without removing the bed.
1	<b>Internal ECG for Symbia</b> <p>The internal ECG gating system provides ECG triggering for the nuclear subsystem for nuclear cardiology examinations. In addition, for Symbia T2, T6, and T16 cameras, the internal ECG gate provides ECG triggering to the CT subsystem for CT applications that require ECG gating.</p> <p>The ECG gate is built into the Symbia patient bed and is controlled by the Symbia acquisition workplace. The leads connect near the head of the patient bed and travel with patient, thus never interfering with scanning.</p> <p>The ECG waveform is displayed on the touch-screen Patient Positioning Monitor.</p>
1	<b>Extra Hand Controller</b> Provides an extra hand controller for the Symbia S scanner.
1	<b>Monitor: 19 inch LCD</b> The 19" LCD Monitor is an economic monitor solution
1	<b>Remote Diagnostic Services</b> Siemens Remote Services. A broadband VPN connection is required for full remote service functionality and optimal system uptime.
1	<b>SPECT US Installation</b> This option includes the mechanical installation of the Symbia S scanner.
1	<b>Symbia.net</b> Symbia.net is an economical solution for reading of SPECT and SPECT•CT studies. The system can be optionally configured with full MI processing capabilities. The Symbia.net can be configured as a client-server system by adding the Server Management option. PET functionality is available on multi-seat systems.
1	<b>Cardiology Engine 4DM</b> The Cardiology Engine Corridor4DM assists in the diagnosis and quantitative assessment of coronary artery disease by enabling the visualization of SPECT studies as well as quantified perfusion assessment.
1	<b>Organ Processing</b> Processing software package that provides cardiac and other organ-based SPECT processing.
1	<b>Reconstruction Engine</b> The Reconstruction Engine provides the ability to shorten SPECT and Planar acquisition times with optimized workflows based on Siemens' innovative Flash reconstruction techniques. This engine is suited to provide the best reconstruction for SPECT-only scanners.
1	<b>Monitor, 19" LCD DICOM</b> The 19" DICOM Calibrated LCD monitor is designed to meet the demanding requirements of medical imaging. The display features high contrast even under high ambient light conditions that can be encountered in nuclear medicine viewing environments. The gamma curve is

Qty	Item Description
	exactly matched to CIE/DICOM recommendation, enhancing the ability to display both color and gray scale images. Light output stability is ensured by continuous backlight control throughout the display's lifetime.
1	<b>4 Quadrant Phantom</b> A 4 quadrant 2.0-2.5.30.3.5 mm standard pattern slightly modified for use with Symbia Imaging Systems
1	<b>UPS for Symbia Camera Systems</b> Uninterruptible power supply option that provides 10 minutes of back up power to the SPECT gantry enabling the proper shut down in the event of a power loss. Also provides noise filtering and transient suppression.  Specifications:5.0 KVA Input configuration: 200-240 VAC, 50/60 Hz, L6-30P Output configuration: 208 VAC, L6-30R
1	<b>UPS for e.soft/c.cam (60 Hz)</b> Uninterruptible power supply option that provides 10 minutes of back up power enabling the proper shut down of the system in the event of a power loss.
1	<b>Initial onsite training 32 hrs</b> Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.
1	<b>MI SPECT Project Management</b> A Siemens Project Manager (PM) will be the single point of contact for the implementation of your Siemen's equipment. The assigned PM will work with the customer's facilities management, architect or building contractor to assist you in ensuring that your site is ready for installation. Your PM will provide initial and final drawings and will coordinate the scheduling of the equipment, installation, and rigging, as well as the initiation of on-site clinical education.
1	<b>Additonal onsite training 32 hours</b> Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from date of purchase order. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.
1	<b>Initial onsite training 32 hrs Gov Offse</b>

One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.

Offset Part 14421656 Additional System Manuals

XX2SYNGO - Syngo with Multimodality Workstation - 5 days at

XX0RADSWRK - Radiation Safety Student Worker - (1 hour) - web based training - Expires in 90

MI2ESOFTWS - ESOFT Workstation -

MI2SYMBIA - SYMBIA S/Symbia Evo Excel Gantry Class - 13 days at

Lodging for Complimentary Biomed for one engineer for 26 nights

Airfare for Complimentary Biomed for one engineer from STL - RDU at x 3 trips =

Lodging for Additional Biomed for one engineer for 26 nights

Airfare for Additional Biomed for one engineer from STL - RDU

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**OPTIONS**

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**OPTION**

Qty	Item Description
1	<p><b>GOV'T ONLY - MI SPECT Training Class</b></p> <p>Tuition for (1) government attendee to attend a classroom course of choice at one of the Siemens training centers. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.</p>
1	<p><b>PHS Extended Pivot</b></p> <p>The PHS extended pivot option extends the range of pivot for the patient bed in gurney mode.</p>
1	<p><b>Under Floor PHS Cable SPECT</b></p> <p>This option includes a kit for installing the cable between patient bed and the Symbia S gantry under the floor.</p>

Lodging for Govt Only Training for one tech for 5 night

Airfare for Govt Only Training for one tech from STL -

## **Description**

- a set of patient support straps to help patient lie still on bed

### **Acquisition Workplace**

The syngo-based high performance acquisition workstation provides a wide range of clinical acquisition protocols utilizing a graphical user interface, keyboard and mouse.

#### **Hardware:**

- Single Quad-Core 3.2 GHz Xeon CPU
- 8 GB RAM
- 2 X 500 GB SATA Hard Drives
- Integrated DVD-R RW
- Workflow-based Architecture

### **SPECT Acquisition Features**

#### **SPECT Acquisition Modes:**

- Planar static and dynamic
- Whole Body
- SPECT, gated, non-gated or both
- Dynamic SPECT
- Whole Body SPECT

#### **Workflow Features:**

The system combines acquisition, post-processing (optional), and display into user customizable workflows that automate many of your clinical routines. Besides remembering and storing your parameters for each clinical protocol, the workflow will automatically print, archive, and distribute your results to other devices on your network.

#### **Quality Control:**

Use the automatic and manual motion correction features of the system to aid you in the quality of your acquired images. Besides motion correction, you can beat normalize your gated studies and create quality control images such as sinograms and linograms to document your results.

#### **3D Orientation:**

Reorient your acquired SPECT volumes interactively to achieve the desired patient position. Cardiac and general orientations are supported. If desired, the orientation applied to one volume can be automatically applied to up to 3 additional volumes.

#### **Image Registration:**

Multiple techniques are available for accurate registration of your acquired images. Interactive, manual translations and rotations in all 3 planes provides a good foundation for good registration. The optional automatic registration technique can often assist you in those hard to register cases. A landmark registration feature rounds out the available techniques. Triple registration and the choice of output matrix size are also standard features.

#### **Reconstruction:**

The reconstruction engine supports up to 5 multi-isotope studies concurrently. Standard SPECT as well as wholebody, dynamic and gated cardiac volumes can be created.

Symbia utilizes energy independent digital Foresight detectors.

Detector assembly technical specifications:

- True rectangular FOV of 38.7 x 53.3 cm (15.25 x 21 in.)
- 59 photomultiplier tubes – 53, 7.6 cm (3 in.) and 6, 5.1 cm (2 in.) diameter tubes
- .95 x 59.1 x 44.5 cm (3/8 x 23 x 17.4 in.) NaI (TI) crystal material

The Digital Foresight Detector features include:

## Description

- Balanced performance between energy resolution and spatial resolution
- One, 10-bit high-speed flash ADC per PMT
- Variable PMT selection ensures high resolution for all multi-energy and multi-peak applications
- Optimized dynamic digital integration time to improve high count rate capability
- Individual PMT pile-up correction for improved performance at high count rates
- Energy independence maintains clinical performance at all energies including multi-peak and dual isotope studies
- Location independence maintains consistent spatial resolution across the field of view
- Crystal variation correction for optimal uniformity and linearity across all energies
- Single source (Co-57 or Tc-99m) tunes the detector for all energies

The low energy high resolution collimator has the following technical specifications:

- 148,000 hexagonal holes
- Sensitivity: 202 cpm/microCurie
- Resolution: 7.5mm at 10 cm
- Weight: 22 kg (49 lbs)

The medium energy collimator has the following technical specifications:

- 14,000 hexagonal holes
- Sensitivity: 275 cpm/microCurie
- Resolution: 12.5 mm at 10 cm
- Weight: 64 kg (140 lbs)

The high energy collimator has the following technical specifications:

- 8,000 hexagonal holes
- Sensitivity: 135 cpm/microCurie
- Resolution: 13.4 mm at 10 cm
- Weight: 125 kg (275 lbs)

Due to the weight of these collimators, it is recommended that an individual collimator cart containing only the 2 high energy collimators be utilized.

The pinhole collimator with 4 mm aperture has the following technical specifications:

- 1 round hole
- Sensitivity: 123 cpm/microCurie for 99m Tc
- Resolution: 6.6 mm at 10 cm
- Weight: 80 kg (177 lbs)

SPECT imaging with a pinhole collimator is not allowed.

The pinhole collimator occupies the upper 2 locations on a collimator cart; Therefore, only an additional 2 collimators (1 pair) can be stored on the same cart.

The productivity package includes the following features:

- Integrated Collimator Changer
- Automatic Collimator Exchange
- Automatic Quality Control

### **Integrated Collimator Changer**

Innovative collimator exchange system that is mounted beneath the patient bed. Saves time and effort when changing the most frequently used collimators. Holds two sets of low or medium energy collimators.

Description
<p><b>Automatic Collimator Changer</b></p> <p>Fully automated changing of collimators within the integrated collimator changer. Collimator removal or exchange is initiated from the patient positioning monitor.</p> <p><b>Automatic Quality Control</b></p> <p>Automatic quality control is performed via self-shielding Gd-153 line and Co-57 point sources. The sources are housed in the patient bed and are extended automatically as part of the camera's quality control procedures. The daily, weekly, and monthly procedures are customer scheduled and performed automatically without manual intervention.</p>
<p>The useful life of the 370 MBq (10 mCi) Gd-153 line, used for daily extrinsic floods and monthly multi-head registration procedures, is 2 years. The useful life of the 1.85 MBq (50 µCi) Co-57 point, used for intrinsic floods, is 1 year.</p> <p>Sources that have been replaced are returned to the source vendor for disposal. Return shipment costs are not included in the purchase price.</p>
<p>The collimator cart is automatically clamped to the patient bed once positioned by the user. The clamping mechanism allows precise collimator exchange to occur.</p> <p>The collimator cart is designed to hold 2 sets of collimators, or 1 set in combination with a pinhole collimator.</p> <p>Due to the weight of the high energy collimators, it is recommended that an individual collimator cart containing only the 2 high energy collimators be utilized.</p>
<p>The Symbia S scanner comes standard with a single hand controller that can be plugged into either side of the gantry. This option adds an additional hand controller for added efficiency in accessing the motorized motions for the patient bed, gantry, and detectors.</p>
<p>The Monitor: 19 in. LCD technical features are:</p> <ul style="list-style-type: none"> <li>- 19" active display</li> <li>- Optimal picture resolution of 1280 x 1024</li> <li>- Anti-glare panel surface</li> <li>- Up to 170 degree viewing angle</li> </ul>
<p>A broadband connection is required for full remote service functionality and optimal system uptime. The Siemens Remote Service option allows for remote access to your networked workstations. Hardware may need to be purchased.</p> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Image Transfer</li> <li>- Remote updates including Virus Protection</li> <li>- Error log retrieval</li> <li>- Remote Workflow revisions</li> <li>- Remote configuration</li> <li>- License management</li> <li>- Remote workstation control via netmeeting</li> </ul>
<p>Installation includes:</p> <ul style="list-style-type: none"> <li>- Complete system assembly</li> <li>- Alignment</li> <li>- System startup</li> <li>- Calibrations</li> </ul>



## Description

- Performance verification to factory specifications

Symbia.net is a clinical workplace that offers:

### System Features:

- Workflow based architecture
- DICOM networking, printing
- User configurable displays
- 3D Orientation
- Image Fusion

### Server Hardware

- Microsoft Windows XP SP3
- Dual Xeon multi-core CPUs
- 12 GB Memory
- Dual Monitor option

Access to reading capabilities from anywhere (requires Server Management option)

- Any standard PC, Mac, or iPad with a network connection can be set up as a client
- Up to five concurrent users can access the clinical network simultaneously

### Easy installation and operation

- Symbia.net easily integrates with existing cameras, RIS and PACS
- A virtually unlimited number of client computers can be installed remotely (requires Server Management option)
- Designed for the needs of nuclear medicine with a user friendly interface and advanced automation features

### Optional Extensions

- Server Management option
  - Supports up to 5 concurrent users
  - 1 seat at the workplace
  - Up to 4 floating client licenses
- Cardiology Engines
- Oncology Engines
- Neurology Engines
- MI Processing Engine
- Advanced SPECT/CT Reconstruction
- MI Cardiac Process Engine

The Cardiology Engine provides the Corridor4DM Cardiac Suite, a comprehensive set of quantitation programs for the evaluation of SPECT Myocardial Perfusion Imaging

The Corridor4DM application includes comprehensive interactive processing and display, generation of 2D, 3D, and polar maps images, calculation of ventricular volumes, myocardial mass and ejection fraction for gated SPECT studies and utilizes gated bloodpool data to calculate left ventricular Ejection Fraction. Compare perfusion and functional polar maps to gender matched normal files, which includes additional support for attenuation correction. Also included are a normal database generator and the ability to create reports within the Corridor4DM application. The Corridor4DM application is an OEM product developed and supported by INVIA.

Outputs include DICOM secondary capture files, result files, reports as well as the ability to generate an AVI or TIFF file.

## Description

Supported software for Profile Reconstruction cardiac data

Applications include: Corridor4DM Cardiac Suite

### Cardiac Processing (Autocardiac Activity) Features

- Process up to 4 series simultaneously
- Mixed Non-Gated, Gated, Profile series simultaneously Profile simultaneous AC and Non-AC Multi-Isotope support (6 per series)
- Separate reconstruction parameters per series / isotope 3D Elliptical Masking
- Filtered Backprojection, Iterative-W, OSEM 2D, or OSEM 3D (optional) Reconstructions
- Coincidence Reconstruction
- True 3D Reconstruction Zoom
- Trial Mode Reconstruction
- Interactive Filter Tool
- Interactive Masking / Centering

### General Reconstruction (TOMO Reconstruction Activity)

- Process up to 5 series simultaneously
- Multi-Isotope support (6 per series)
- Standard Tomography and Dynamic Tomography reconstructions
- Separate reconstruction parameters per series / isotope
- 3D Elliptical Masking
- Filtered Backprojection, OSEM 2D or 3D (optional) Reconstructions
- 3D Reconstruction Zoom
- Trial Mode Reconstruction
- Interactive Filter Tool Interactive Masking / Centering
- Chang's Attenuation Correction

### Quality Control (Quality Control Activity) Features

- Sinogram, Linogram, and Summed Image
- Cine with reference line
- Automatic and Manual Motion Correction
- Static       X / Y / Copy / Paste
- Dynamic     X / Y / Copy / Paste
- Gated        Histogram Review
- Tomo         X / Copy / Paste
- Dynamic Tomo       Repeat X / Copy / Paste
- Dynamic Tomo       X / Copy / Paste / Repeat Rejection

### Image Fusion

- Automatic adjustment based on pixel size
- Volume translation and rotation operations
- Manual, interactive volume manipulations
- Manually enter desired translation and rotation parameters
- Adjustable alpha blending display
- Selectable viewing angles
- Choice of output matrix size (64, 128, or 256)
- Landmark registration technique

### Organ Based Processing

## Description

### 3D Reorientation

- Free angle reorientation of reconstructed series
- Process up to 4 series simultaneously
- Process 1 series to create 3 different series, each in a different plane

### Cardiac Planar Gated Blood Pool

- Left and Right Ventricular EF Analysis
- Regional EF Analysis
- Automated Image Filtering
- Automatic or Manual ROI determination
- Functional Image Creation
- Curve Analysis
- Filling and Emptying Rate Analysis

### Shunt Analysis

- Automatic Composite Creation
- Curve Smoothing and Fitting Options
- Integral Calculation for Patient and Shunt Curve
- Shunt Qp/Qs via Area Method
- Shunt Qp/Qs via Height Method

### Lung Analysis

- Total or Segmented analysis
- Perfusion Quantitation
- L/R Lung Comparison
- Geometric Mean Calculation
- Single Lung Processing

### Thyroid Analysis

- Automatic or Manual ROI determination
- Uptake, Countrate, Area and Volume Calculations
- Single Lobe Processing
- 6 and 24 Hour Uptake

### Renal Analysis

- Automatic or Manual ROI Determination
- Gates GFR
- Oberhausen ERPF
- Itoh ERPF
- Oriuchi MAG3
- MAG3 without Blood Sample
- Transplant
- Captopril Comparison
- Curve Analysis
- R/L Ratio
- Bubeck (TER) Processing

### Gastric Emptying Analysis

- Automatic or Manual ROI Determination
- Dual Isotope / energy window support
- Geometric Mean Calculation
- Curve Fitting Routines

## Description

- Liquid / Solid Processing
- Emptying Calculations

### Hepatobiliary

- Automatic or Manual ROI Determination
- EF Calculations
- Dynamic and Static Methods supported
- User Defined Interval EF Processing

### Brain Analysis

- ROI Quantitation and Ratio Analysis
- Bloodflow Analysis
- Patlok Plot & Cerebral Bloodflow
- Lassen Method
- IMP
- IMP-ARG
- NIMS

### Image Manipulation

- Series Filter
- Series Arithmetic
- Series Reformat
- Series ROI & Curve

The Reconstruction Engine includes a three dimensional iterative reconstruction method with resolution recovery and scatter correction. It also includes statistics-based adaptive de-noising and de-blurring of planar images and longitudinal whole body bone scans. It can be used to shorten the acquisition time of planar images, bone scans or SPECT studies without loss in image quality. This reconstruction method can also improve overall image quality with better contrast, higher resolution, and decreased image noise when used to reconstruct full-time studies. This packages provides syngo MI Workflows with half-time acquisition parameters and optimized reconstruction settings and filters, specifically designed to acquire whole body SPECT scans in the time of a conventional whole body bone scans and to increase the scan speed of whole body bone scans to shorten scan time.

Applications include: Flash3D and Scatter Correction for general and cardiac exams as well as Planar ½ Time Imaging.

Additional features include:

- 19" TFT panel
- minimum of 170 degree horizontal and vertical viewing angle
- Optimal picture resolution of 1280 x 1024
- Contrast ratio 450:1
- Maximum luminance 280 cd/m2
- Anti-glare panel surface

Specifications:

1.4 KVA

Input configuration: 120 VAC, 5-15P

Output configuration: 120 VAC, (6) 5-15R

Description
The extended pivot opens the range from 40 degrees to 45 degrees to allow better handling of wide hospital beds.
This option does not include the cost of any room modifications for sub-floor installation of the cable.