SAMSUNG

Quotation Prepared for:
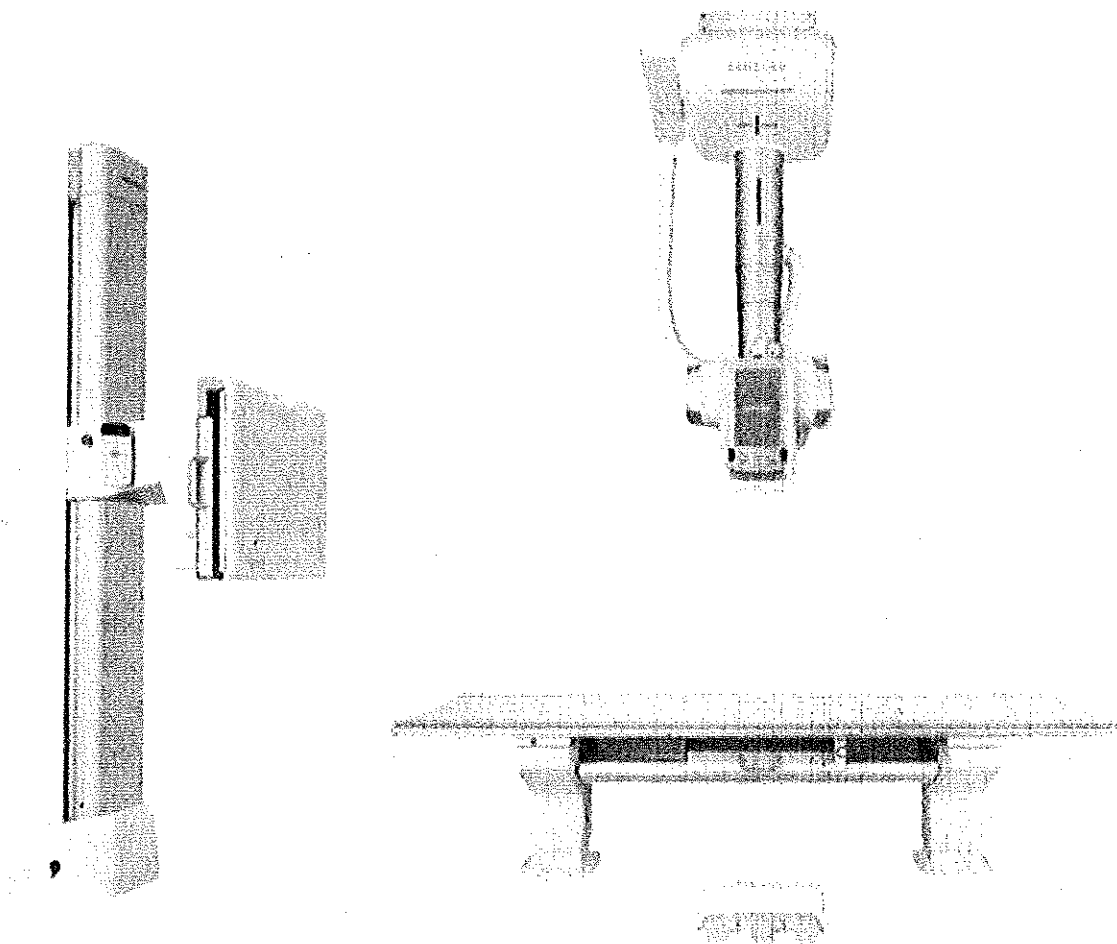
Mann-Grandstaff VAMC Spokane

SAMSUNG Dual Detector GC85A
Smart Digital Radiographic System

VA/DOD CONTRACT #SPM2D1-10-D-8345

XR RAD, VAMC SPOKANE, WA
PO# 668-B70009

SAMSUNG Dual Detector Smart Digital Radiographic System

GC85A Quotation

Experience a new level of efficiency in digital radiography. The GC85A is the new flagship Smart Digital Radiographic System from Samsung Electronics. It offers high-quality dose efficient DR performance with a simplified workflow. The GC85A increases throughput and improves workflow while delivering superior images at the lowest possible dose.

System includes:

Elevating Open Construction Float-Top Radiographic Table

Table top dimensions (LxW)	2410mm x 812mm
Elevating (Up/Down) range	545~900mm
Longitudinal travel (Left & Right) +-	480mm
Transverse Travel (Front & Rear) +-	140mm
Max. patient weight	220kg

|	
Elevating from min. to max height	40mm/sec
Foot switch	Wireless foot switch
Auto Tracking	Longitudinal tracking of detector w/ longitudinal travel and rotation of tube
Auto Centering	Automatically adjusts and centers detector and the tube
Shared Bucky	S4343-W & S4335-W available on a bucky
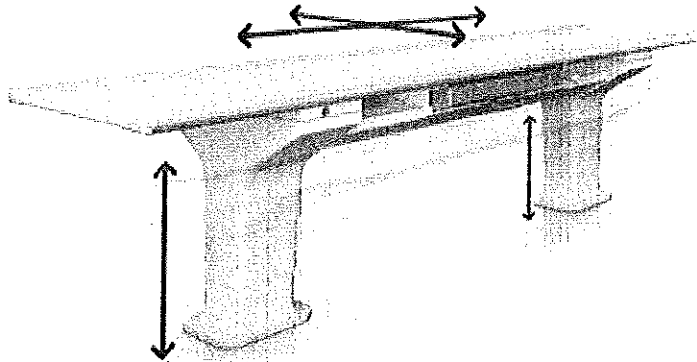
S4343/W - FPD (Wireless S Detector)

The ultrasensitive FPD (Flat Panel Detector), developed based on Samsung Electronics' outstanding TFT technology, features proprietary ALDAS (Advanced Low Dose Amorphous Silicon Sensor) technology. ALDAS improves patient safety and the reliability of the diagnosis by acquiring high-resolution images with a very small amount of radiation

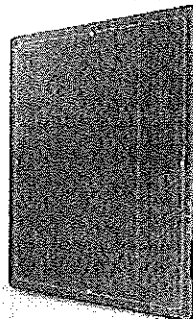|	
Detector type	Amorphous Silicon TFT/Cesium Iodide Scintillator (CsI)
Dimensions (Active field)	17" x 17" (43cm x 43cm)
Active detector matrix	3036 x 3040 pixels
Effective area	425.04mm x 425.60mm
Pixel pitch	140µm
A/D conversion (Pixel depth)	16bits gray scale
Dynamic range	>14000LSB
Spatial resolution	3.57 lp/mm
Detective Quantum Efficiency (DQE)	80% (0.1lp/mm) typical
Modulation Transfer Function (MTF)	85% (0.5lp/mm) typical
Battery Charging Time	6 hrs. (tethered) – 3 hrs. (charger)
Battery Life	160 Images for 4 hrs.
Installation	Wireless/Tethered
Weight	3.7kg

S-Detector

Wireless, lightweight S-Detector with high DQE and a portable grid displays the patient's body structure clearly and easily without increasing dose. Three available S-Detector sizes support imaging of various areas.
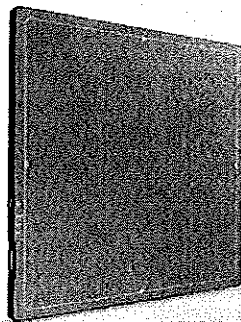
S4343-W
43x43cm (17"x17")

S3025-W
30x25cm (12"x10")

S4335-W
43x35cm (17"x14")

High DQE

Lightweight

S4335/W - FPD (Wireless S Detector)

Digital Detector

Detector type	Amorphous Silicon TFT/Cesium Iodide Scintillator (CsI)
Dimensions (Active field)	17" x 14" (43cm x 35cm)
Active detector matrix	3040 x 2466 pixels
Effective area	425.6mm x 345.2mm
Pixel pitch	140µm
A/D conversion (Pixel depth)	14bits gray scale
Dynamic range	> 14000LSB
Spatial resolution	3.57 lp/mm
Detective Quantum Efficiency (DQE)	73% (0.1lp/mm) typical
Modulation Transfer Function (MTF)	84% (0.5lp/mm) typical
Battery Charging Time	6 hrs. (tethered) - 3 hrs. (charger)
Battery Life	160 Images for 4 hrs.
Installation	Wireless/Tethered
Weight	3.1kg

DGR-ACCSDC/US – Battery Recharger

Dimension	208mm x 155mm x 65mm (WxDxH)
Weight	1.2kg.

DGR-ACCSBD/US – Battery 2 Each

|	
Dimension	98mm x 57mm x28mm (WxDxH)
Weight	0.14kg

With S-Share Technology, Samsung Detectors Can Be Used On Any Of Your Samsung DR Systems to Get The Most Out of Your Investment

S-Share

S-Detectors are compatible with Samsung DR Systems, so when components break or fail, ceiling DR S-Detectors can be used for other systems. Various detector configurations support unique clinical needs and continuous care.

Mobile
Digital X-ray

Ceiling
Digital X-ray
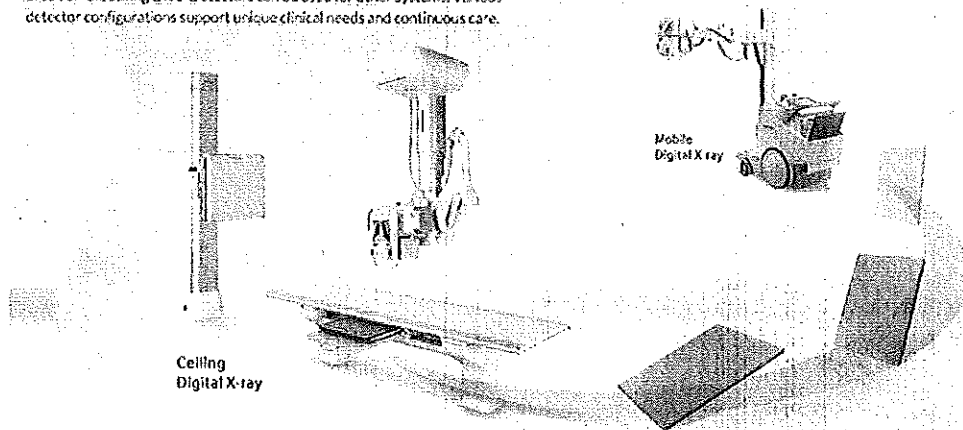
Large Integrated Digital Workstation
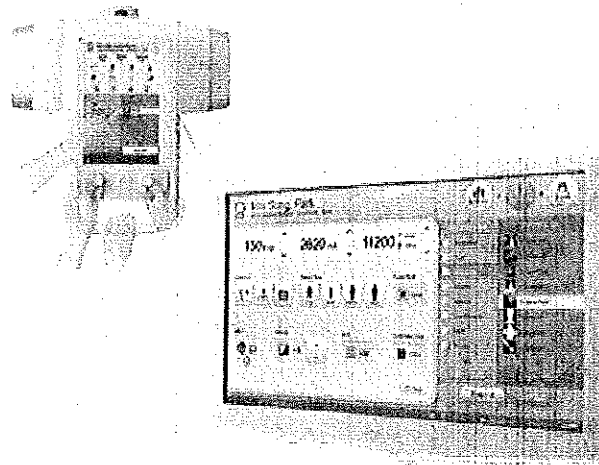
Post Image Processing Technology ALCOS
(Adaptive Local Contrast Stretching)

ALCOS is an outstanding post image processing technology that automatically determines suitable image conditions depending on the target body parts and tissues. This proprietary technology provides qualified images for diagnoses by applying high resolution image contrast and edge sharpness enhancement functions. Users can acquire more accurate imaging data at a faster speed, which

ultimately leads to a highly productive medical environment.

Imaging Workstation – XGEO Station
Hardware

|		
-	CPU	Intel Xeon Processor (3.60GHz, 10MB)
-	RAM	8GB
-	HDD	1TB
-	Operating system	Windows 7 Pro
-	Accessories	Keyboard, Mouse
-	Monitor	Full HD 21" LCD Monitor (1920x1080)
-	CD/DVD recorder	For digital image storage on CD/DVD

Software

- Image acquisitions times**   S4343-W (Wireless Mode) : Preview 2.3 sec, final image 7.8 sec
- AED function Cycle time   10sec (Tethered, Wireless Mode)
- Post Processing   S-Vue
- Auto Cropping   Auto shutter
-     Display functions   Window Level Control, Zoom/Magnifier, Flip/Rotate, Invert Shutter (Fixed/Auto/Manual) Annotations (Marker/Free Text/Arrow/Line/Length/Angle/Cobbs Angle/ Rectangle/Ellipse) Layout (1x1, 1x2, 2x1, 2x2)
-     Multi Language (workstation only) English, French, German, Italian, Spanish, Russian, Simplified Chinese, Portuguese, Turkish, Finnish

Network Specifications

- DICOM Verification
- DICOM Modality Worklist   Interface with HIS/RIS with auto refresh option
- DICOM MPPS   Send the status of exams to HIS/RIS
-     DICOM Storage   Send image (DX or CR IOD) and GSPS to PACS
-     DICOM Storage Commitment
-     DICOM Grayscale print   Support DICOM printers
-     DICOM Query/Retrieve   Query and retrieve DX and CR images from PACS
-     DICOM GSPS Send overlay information along with image
-   DICOM Media Exchange   Patient images export to DVD/CD

(DICOM DIR)

Remote Control System
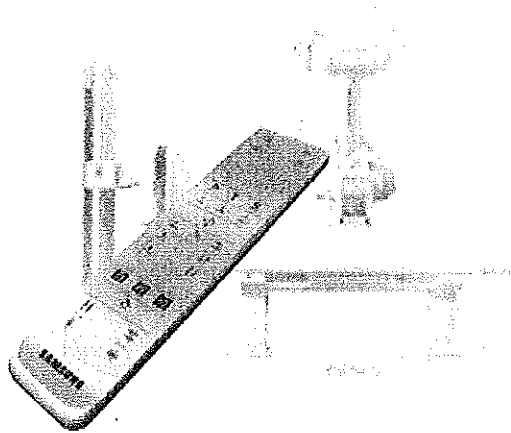
Intelligent Soft Handling Ceiling Mounted Tube Suspension

Overall workflow is improved by allowing the user to position the Ceiling Mounted Tube Suspension manually with the aid of Soft Handling Power Assist or Full Automatic Robotic operation. Integrated collimator, 12" Touch Screen with Intuitive Graphic User Interface.

12 inch
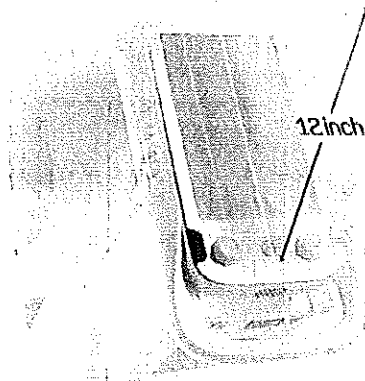
Collision Avoidance System
Senses obstruction in path of travel and stops until obstruction is removed
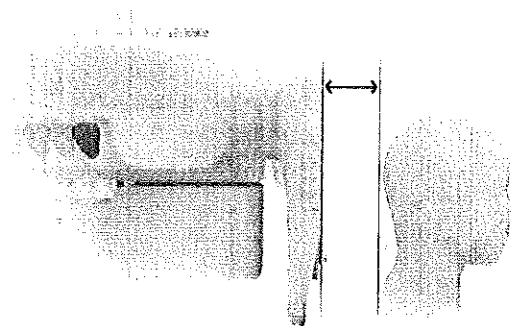
Auto Parking & Positioning

S-Align Provides Precise Alignment for Superior Imaging

S-Align

S-Align provides precise alignment for superior imaging. S-Align displays the detector's angle to the THU to enhance image quality during free exams. When the THU and detector are within a certain radius, the angles are automatically fitted.

Automatic **Tilting Wall Stand**

| Up/Down range | 400~1800mm (Motorized & Manual) |

|	
Detector tilting	-20~+90 Degrees
Detector rotate range	0~+45 Degrees

Smart Control

An operator can precisely position the entire system with one touch of the control panel's buttons. The user can move a motorized, tilting receptor with a remote control from -20 to 90 degrees to various areas such as skulls or hands with no need for a table.
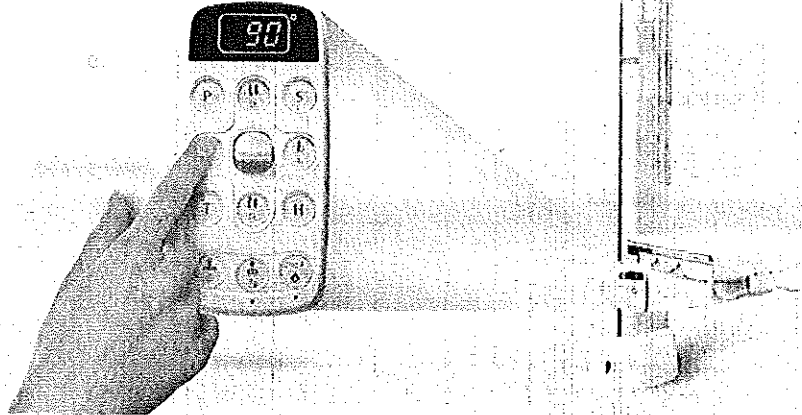
Automatic Collimator with 4-way Independent Blade Control

Collimation control Manual or Automatic
When scanning an area that is smaller than the area of the FPD, the individual Blade control moves the four axis of the area to lower unnecessary radiation exposure. This function is especially effective when scanning the chests of children.
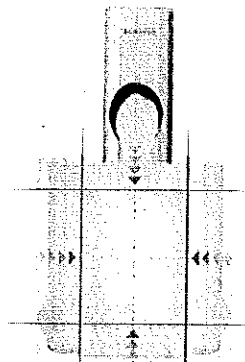
Smart Stitching Allows for Table and Wall Stand Procedures

Smart Stitching

Fast Smart Stitching eliminates the need for the patient to stand for long periods of consecutive shooting. Plus, a stitched image provides greater diagnostic clarity than separate images.
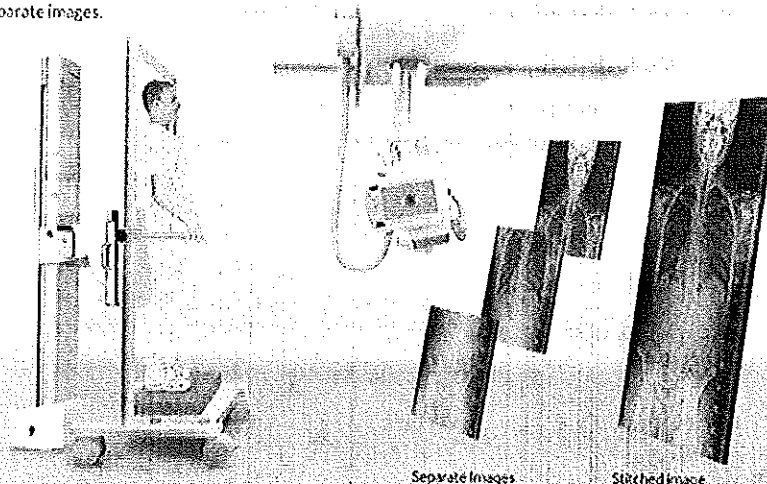
Average acquisition time for a 3-images exam	< 15sec (Table)
	< 15sec (Stand)
Image pasting and processing time for a 3-image exam	
	< 15sec from last exposure

Automatic Exposure Control (AEC)

Minimum Response Time	Less than 1 mS
Output Sensitivity (Gain Range)	Adjustable 0.046 ~ 0.91 V/ µGy @76 kV. Additional output sensitivities available upon request
Ionization Chamber Potential	+75 VDC ±10 V (internally generated)
Output Reproducibility	Less than ±0.045 Coefficient of Variation
Output	Linear ramp with no more than ±5 % deflection in full output scale.
Field Matching	Outputs of multi-field chambers are individually adjustable to within 5 % of one another.
X-ray % Transmission	No less than 85 % from 50 kV to 150 kV with 2.5 mm to 3.0 mm total aluminum equivalent beam filtration

	from the x-ray tube and collimator
Power Supply Requirement	±11.4 VDC ~ ±15.75 VDC@ 0.1 A unless specified otherwise
Operating temperature	10 ~ 40 °C
Operating Humidity	10 ~ 60 % relative humidity non-condensing
Operating Atmospheric Pressure	860 ~ 1060 hPA
Transport and Storage Temperature Range	-40 ~ 70 °C
Transport and Storage Humidity Range	10 % ~ 95 % relative humidity non-condensing
Transport and Storage Atmospheric pressure	860 ~ 1060 hPA

Dose Area Product (DAP)

DAP (Dose Area Product) measures the amount of radiation delivered with each exposure and can be interfaced to PACS.
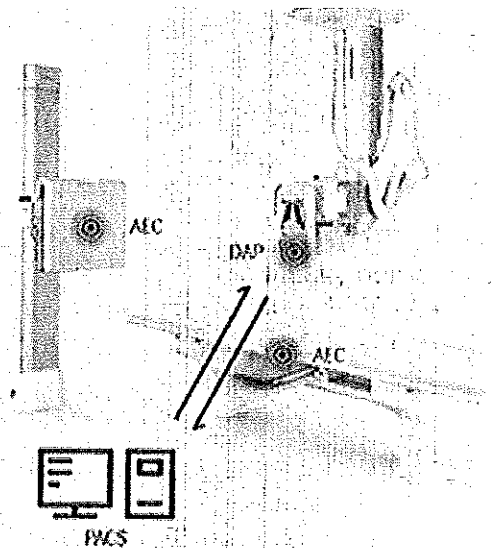Chamber voltage 300V
Distance of the electrodes 6mm
Stabilization time 5min

Dose Management

GC85A minimizes excessive radiation exposure with an auto sensor and by sending various shooting condition data such as Auto Exposure Control (AEC) and X-ray dose information measured by the Dose Area Product (DAP).

Scatter Radiation Grid

Patient table	460mmx460mm, 215lp/inch,10:1, SID 100cm, Carbon cover
Wall stand*	460mmx460mm, 215lp/inch,

10:1, SID100cm, 130cm or 180cm,
Carbon cover

*Selectable at time of order

## 82 KW High Frequency Generator

X-Ray generator designed for complete integration to Digital Workstation,
for easy operator use.

Max. output   82kW, 150kVp, 1000mA
Exposure voltage   40~150kV (1kV step)
mA range   10~1000mA
Time range   0.001~10sec

## Reduce Energy Usage with the Samsung Save-Power Mode

Save-Power Mode

When the equipment is in Standby mode, the system supports Ready to Scan
and Energy Save modes. Energy Save mode can lower power consumption by
reducing electricity usage by half compared to Ready to Scan mode.
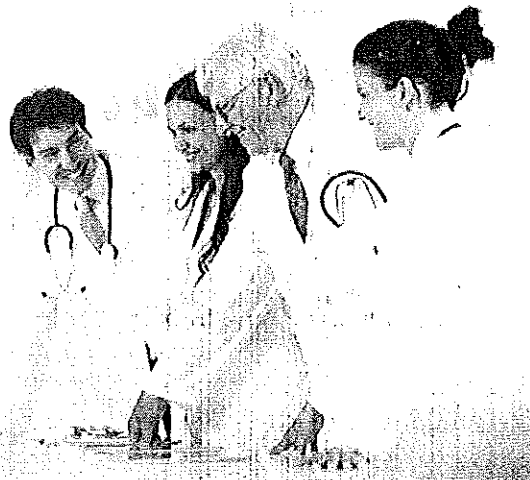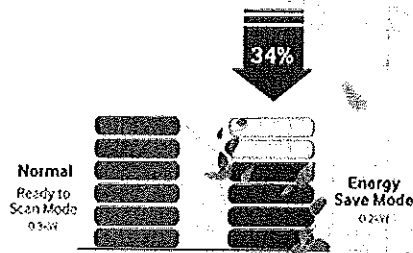
Procedure Positioning Help

The visual guide provides various scanning positions to help the Technologist
acquire images easily when performing unfamiliar procedures
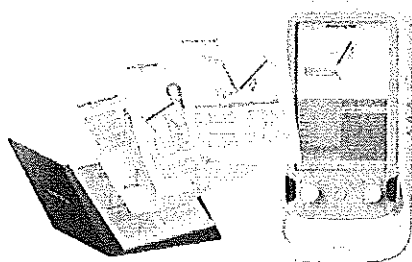
On-Site Key Operator Training

System List Price:

Selling Price:

Options: (add option price to System Price shown above)

Bio-Medical Training Classes   **5 Day Training held at our Training facility in Danvers, MA. Tuition only, Airfare and Lodging not included.**

Applications – Three (3) days on-site training plus, travel   i

DGR-ACCDWD - Detector Weight Distribution Cap

Advanced Application Software Package Included at no charge

SimGrid -

SimGrid to increase convenience with your diagnostics. With just a click, SimGrid allows you to provide better patient care with higher satisfaction and reduced retake rates without the use of a portable grid. It improves image contrast by reducing scatter radiation effects and creates better image quality.

Bone Suppression Imaging (BSI) -

Bone Suppression for better evaluation. Without additional setting or exposure, Bone Suppression Imaging improves the clarity of soft tissues by suppressing the appearance of bones in chest images, which improves your ability to detect nodules. You can easily create the companion image with just a click on the screen.

S-Guide -

Patients are displayed on-screen through camera view to simplify stitching settings. Simple clicks on the screen replace manual settings for stitching range. You can see your patient until just before the image is taken and can immediately apply adjustments if the patient moves, which reduces your retake rate.

Additional Options:

Extended service contracts available through your local Samsung Regional Office. Pricing will vary based on type of service requested. All GC85 rooms come with a comprehensive 12-month parts and labor warranty.

**FREIGHT WILL BE ADDED AT TIME OF INVOICING UNLESS NOTED IN QUOTE