GE Healthcare

CS Diagnostic System Exercise Stress Testing ECG application

Clinically connected. Simply smart.

CS™ Diagnostic System Exercise Stress Testing ECG application transforms your physician office PC into a stress ECG device. The Cardiac Acquisition Module (CAM-14) with the CAM USB A/T interface is easily connected from the patient to your PC's standard USB port. The CAM-14 provides high-quality ECG presentation for accurate cardiac assessment of your patients. Its outstanding digital signal processing reduces artifact for clearer tracings.

- Patented Exercise Test Interpretation (XTI) algorithm highlights critical values for efficient and timely diagnosis

- Proven GE Marquette® 12SL™ Resting ECG analysis program and 15-lead stress measurement

- The new ST/HR hysteresis analysis feature enables increased accuracy[1] in detecting coronary artery disease in women and adds confidence in identifying the most appropriate treatment.

- Finite Residual Filter (FRF) and Cubic Spline provide ECG baseline correction and artifact resolution without sacrificing critical ST measurements

- Automatic Arrhythmia Detection assists in documenting arrhythmias that occur during stress testing

- Export flexibility of your CS Diagnostic System Stress reports via PDF, XML, Microsoft® Word or Excel®. The name of the PDF is automatically generated based on patient demographics for accurate assignment of the PDF to the correct patient in an EMR or HIS system. XML export makes nearly all internal values and parameters available for export to third-party applications for research

- Flexible and configurable report options to meet reporting preferences of physicians

- Seamless connectivity with other CASE®, MUSE® Cardiology Information Systems and with EMR* systems for workflow efficiencies

- DICOM formatted stress ECG report generated by CS Diagnostic System is automatically exported to PACS workstations, making physician over-read fast and efficient while speeding up patient throughput

- Multiple networking options are available (consult CS Diagnostic System Networking product sheet)

*Check EMR vendors compatibility with your GE representative
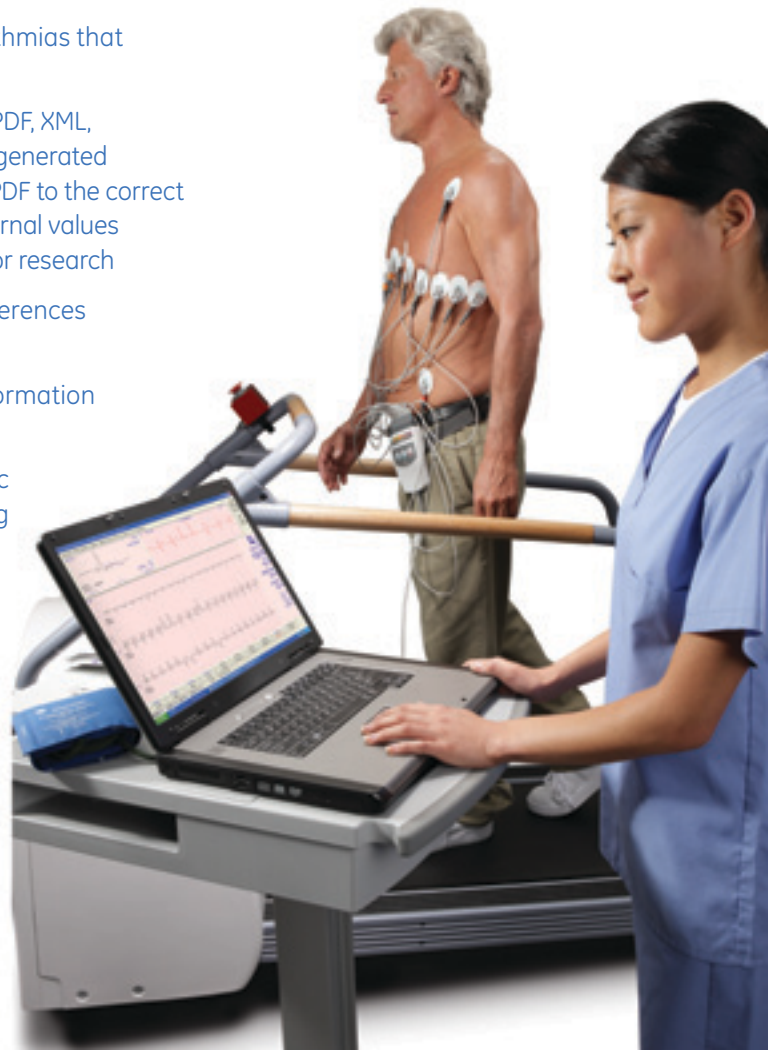
Specifications

Signal processing	
ST measurements	ST amplitudes, slope, integral, index, ST/HR slope, ST/HR loops, ST/HR
E, J and post-J point	Manual or computer selected
Signal processing technique	Incremental median updating
Baseline correction	Cubic Spline and/or Finite Residual Filter (FRF) algorithm
QRS detection and analysis	Based on automatic or manual lead selection
ECG output	Real-time ECG/QRS beep/TTL synchronization output
Heart rate	Automatic arrhythmia detection, documentation and annotation
Full disclosure ECG	Beat-to-beat ECG record and event review
Reanalysis	Post-test medians measurements from E, J, post-J point selections
ECG	(Optional) 12SL adult and pediatric ECG analysis program
Additional ECG function	Vectorcardiography

Technical specifications

Communications/storage	
MUSE systems compatible via diskette; network (optional)	
MUSE Web compatible for retrieval view and printing of MUSE system data	
CS Web compatible for report viewing	
PDF export of final reports (auto export and custom file name)	
Microsoft Word export of configured reports	
XML or Excel export of specified data	
EMR connectivity	EMR Gateway
DICOM	Bidirectional, DICOM modality worklist
Data acquisition (via CAM-14)	
Technology	Active, "Type BF" floating isolated powered 14-channel acquisition module with built-in lead-fail detection and lead prep impedance measurement
Sampling rate	4,000 samples per second, per lead across 15 leads
Dynamic range	320 mV, ±10 mV signal superimposed on ±150 mV DC offset
Resolution	4.88 µV/LSB @ 500 Hz
Noise	<15 µV peak-to-peak noise over 0.01 to 150 Hz (-3 dB) bandwidth
ECG analysis frequency	500 Hz
High pass filter	0.01 (or 0.05 Hz, special use) with DC offset control
Low pass filter	20, 40, 100, 150 Hz (selectable)
Line filter	50.0 or 60.0 Hz notch filter (selectable)
Baseline correction	Cubic Spline algorithm
Artifact/baseline correction	FRF and Cubic Spline algorithms
Common mode rejection	Measured: 100 dB, calculated: >140 dB (123 dB with AC filter disabled)
Impedance	>10 M Ohms @ 10 Hz, defibrillator protected
Patient leakage	<10 µA
Pace detect	Orthogonal LA, LL and V6; 750 µV @ 50 µs
TTL sync	CAM USB – AT uses 100-240v AC adapter

Computer specifications

Microprocessor	Minimum: "Pentium 4 Class" Processor 1.6 GHz (Windows XP Professional); "Pentium 4 Class" Processor 2 GHz (Windows 7 Professional)
RAM	Minimum: 512 MB (Windows XP Professional); 1 GB (Windows 7 Professional)
Hard drive	Minimum: 20 GB (depending on number of tests to save); 4 GB of free memory
SW installation	CD-ROM drive
Pointer	Mouse
Graphics adapter	Minimum: SVGA 1024 x 768 Recommended: SXGA 1280 x 1024
Interfaces	Minimum: 2 USB ports, CD-RW, SD card, network interface card (recommended), Serial RS232 for each device using this interface type
Operating system	Windows XP/Professional SP3; Windows 7 Professional (32 bit and 64 bit, with SP1);
Printer	HP P3015dn (printer not available for purchase from GE Healthcare in all regions. Confirm availability with your local GE representative)
Additional software for export functionality	Microsoft® Word and Excel® (optional)
Networking LAN	Wireless: 802.11G (optional) TCP/IP interface
Citrix®	Citrix application software not sold, installed or supported by GE Healthcare

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imagination at work

[1]Svart K, et al. "Exercise electrocardiography detection of coronary artery disease by ST-segment depression/heart rate hysteresis in women: The Finnish Cardiovascular Study," Int J Cardiol (2008), doi:10.1016/j.ijcard.2008.11.038.

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