



# CardioSoft™

## Cardiac Testing System



### Signal processing

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ST measurements – Stress	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 using HEART Exercise program
Artifact/Baseline correction	ADS or Finite Residual Filter (FRF) algorithm
QRS detection and analysis	Based on automatic or manual lead selection
Arrhythmia detection	Automatic arrhythmia detection, documentation and annotation
Full disclosure ECG	Up to 60 minutes of full disclosure with event review both during and post acquisition
Reanalysis – Stress	Post-test median measurements from E, J, post-J point selections
ECG analysis	Marquette™ 12SL ECG Analysis Program for Adult and Pediatric
Computerized Measurements	15-lead analysis includes measurements of user-selectable additional 3 leads
Additional ECG function	Vectorcardiography
Heart Rate Meter	30 to 300 BPM $\pm 10\%$ or 5 BPM, whichever is greater. Heart rates outside this range will not be displayed.

### Communications/storage

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ECG data formats	GE Hi-Fidelity ECG, XML
MUSE™	MUSE Cardiology Information System Compatible (v7 or later) with bi-directional orders and ADT support

MUSE Web	Compatible for retrieval view and printing of MUSE system data
Data export	PDF export of final reports (auto export and custom file name); PDF export of Full Disclosure data; Microsoft® Word export of configured reports; XML or Microsoft Excel® export of specified data
EMR connectivity	Integrated with Centricity Practice Solution (CPS) EMR; Other EMRs through MUSE Cardiology Information System (v8 or later); or GDT/BDT Interface
DICOM	Bidirectional, DICOM modality worklist/orders

### Data acquisition (via CAM Connect 14)

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Technology	Type CF, Defibrillation-Proof Defibrillation protection: Per IEC 60601-2-25:2011
Lead System	15 lead
Dynamic Range	AC Differential $\pm 5\text{mV}$ , DC offset $\pm 300\text{mV}$
Common Mode Rejection	$>130\text{dB}$ ( $>100\text{dB}$ with AC filter disabled)
Input Impedance	$>10\text{M}\Omega$ @ 10 Hz, defibrillator protected
Patient Leakage	$<10\ \mu\text{A}$
Quality Indicators	Real-time electrode placement support with LED lead quality indicators
Remote control	ECG acquisition button
Ingress Protection Level	IP $\times 4$
High pass filter	0.04
Additional report filters	20, 40, 100, 150 Hz (selectable)
Line filter	50.0 or 60.0 Hz notch filter (selectable)
QRS trigger	TTL synchronization output

## Wireless data acquisition (via GEH ECG 1200)

### Acquisition unit

Lead system	Standard 12 Lead
Patient Leads	Detachable 10 Lead wires conform to AAMI
Defibrillation protection	Protected against 360J discharge
Patient leakage current	< 10 uA
Input impedance	> 10 MOhm
CMMR	> 90dB
Frequency range	0.05 – 150Hz
Dynamic range	+/- 2.4V
Resolution	24 bits (0.286 uV/LSB)
Sample Rate Internal	8000
Sample Rate Recording	500
Lead OFF Detection	Yes
Communication	Digital RF 2400 – 2483 MHz, 0.4mW, conform to FCC Part 15.249
Battery	Size AA x 2, Alkaline or NiMH
Operation Time	Up to 40 hours with Alkaline Batteries
Dimensions and weight	Weight [g]: 350 Size [mm]: 140 x 95 x 50
Classification	Type-CF, Internally powered
Pace Detection	Sampling rate: 500 sps
Additional report filters	20, 40, 100, 150 Hz (selectable)
Battery Indicator on HOST	0%- 100% (at a gap of 20%)

### Receiver

ECG Out	0.5 to 150 Hz (Bandwidth-3db)
ECG Out Gain	1000
ECG Out Sample Rate	500
TTL Trigger width	16-128ms

TTL Trigger delay	<11ms (delay from R-wave)
Interface	USB 2.0 compliant
Communication	USB 2.0 Full Speed Digital RF, 2400-2483.5 MHz, 0.4 mW, conform to FCC part 15.249
Power: USB 5V	100mA max at 5V input

### Display type

Monitored leads	12, 15 – Resting; 3, 6, 12, 15 – Stress
Displayed leads	Number on screen 3, 6, 12 or 15
Display format	4 x 2.5, 4 x 2.5 + 1 rhythm, 2 x 6, 6 rhythm, 3 rhythm – Resting 4 x 2.5 + 1 rhythm, 2 x 6, 6 rhythm, 3 rhythm, 3 rhythm + medians, 3 rhythm + trend - Stress
Display speeds	25, 50 mm/s
Display sensitivity/gain	2.5, 5, 10, 20, 40 mm/mV – Resting 2.5, 5, 10, 20 mm/mV – Stress

### Computer specifications

Microprocessor	Minimum Pentium® 4 class processor with 2 GHz
RAM	Minimum 2 GB
Hard drive	Minimum 80 GB and 4 GB of free space if used as a standalone system
SW installation	DVD-ROM drive or USB
Pointer	Mouse
Display resolution	Minimum: 1280 x 768 Maximum: 3840 x 2160
Interfaces	Minimum: 2 USB ports (1.1, 2.0, or 3.0) for each device using this type of interface, CD-RW, SD card, network interface card (recommended), Serial RS232 for each device using this interface type
Operating system	Windows 10 Enterprise (64 bit) Windows 10 Professional (64 bit) Windows 7 Professional (64 bit) with SP1 Windows 8.1 Enterprise (64 bit) Window 8.1 Pro (64 bit)
Additional software for export functionality	Microsoft Word and Excel (optional, Customer Supplied)

1 Marquette 12SL ECG Analysis Program Physician's Guide, 2032056592-002 Revision B. 2015, GE Healthcare: Milwaukee, WI

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