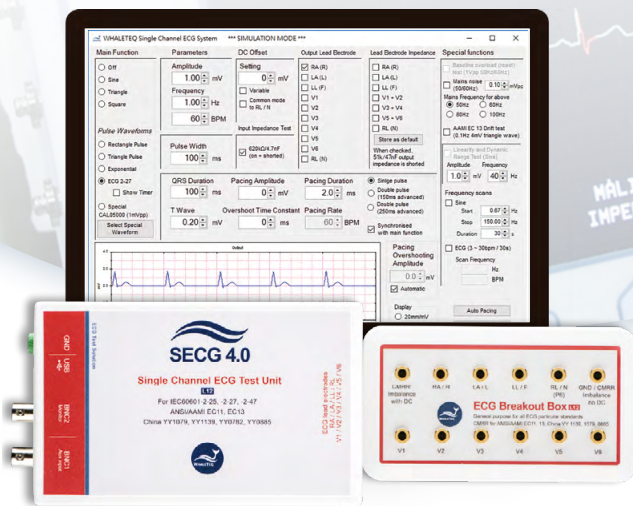


SECG 4.0



ECG Performance Tester

The ECG simulator designed for performance testing.
Suitable for compliance and production line testing.

- Single channel performance tester for diagnostic ECG, monitoring ECG and ambulatory ECG.
- Built-in test circuits per defined in ECG standards.
- Excellent shielding and grounding design makes amplitude and frequency accuracy $< \pm 1\%$.
- DC offset and pacemaker signal output can be adjustable.
- Load ECG file function enables to load and replay recorded or programmed waveforms.
- Offer alternative input of external generator for arbitrary waveforms.
- Software Development Kit (SDK) assists user to develop customized or automated test software with less efforts.



IEC 60601-2-25, IEC 60601-2-27, IEC 60601-2-47, AAMI EC11, AAMI EC13, YY1079, YY1139, YY0782, YY0885, JIG 760, and JIG 1042



Compliance



Production Line



SECG 4.0 Specifications

Parameter	Specification	System Capability / Notes
Main output voltage accuracy	$\pm 1\%$ for amplitudes of 0.5mVpp or higher	$\pm 0.3\%$
Main output voltage resolution (DAC resolution)	N/A	2.5 μ V
Frequency / pulse repetition rate accuracy	$\pm 1\%$	$\pm 0.1\%$
Pulse duration / timing accuracy (excluding pacing)	± 1 ms	± 0.2 ms
Pacing pulse width accuracy	± 5 μ s	± 1 μ s
Pacing pulse amplitude accuracy, range	± 2 mV pulse: $\pm 1\%$ >2mV pulse: $\pm 10\%$ Range: ± 2 mV to ± 700 mV	± 2 mV pulse: $\pm 0.3\%$ 100mV pulse: 1% or ± 5 mV
Pacing pulse characteristics	Rise/fall time 5 μ s Overshoot <1% Settling time <1%	
Pacing pulse overshoot (intentional)	Method A according to IEC 60601-2-27	
Resistor tolerance	$\pm 1\%$	$\pm 0.5\%$
Capacitor tolerance	$\pm 5\%$	$\pm 5\%$
Precision 250:1 divider	$\pm 0.1\%$	$\pm 0.05\%$
Sample rate	5kHz $\pm 0.1\%$	10kHz $\pm 0.05\%$ (50ppm)
DC offset (fixed, noise free, sourced from internal super capacitor)	300mV $\pm 1\%$	300mV $\pm 0.1\%$
DC offset (variable, up to 1000mV, may include up to 50 μ Vpp noise)	Setting $\pm 1\%$ or ± 3 mV	Setting $\pm 1\%$ or ± 3 mV
Power supply	USB +5Vdc supply (no separate power supply required) 0.5A (high power mode)	Typical load <0.25A, up to 0.45A is possible if all relays are turned on

