

# POLY-SPECTRUM-8/EX

12-channel Wireless Digital ECG System



12-channel ECG recording with automatic measurement and interpretation



portable and wireless



advanced solution for exercise ECG and resting ECG



Windows and Android-based software applications



optional modules for HRV, stress ECG, PWV, VLP, QT

ECG



**Neurosoft**

more than  
**20**  
years of expertise

## POLY-SPECTRUM-8/EX — CONFIDENT CHOICE FOR COMPREHENSIVE ECG DIAGNOSTICS



Since the introduction of our first digital system in 1996 we constantly perfect our ECG solutions focusing on your changing needs and latest technologies.

The feedback obtained from our users and practicing cardiologists allows us to enhance our software with new interpretation and measurement criteria and ensure the optimum performance with uncompromising quality.

The dedicated software modules for ECG measurement and interpretation, high-resolution ECG recording, pulse wave velocity (PWV) analysis, QT dispersion and etc. meet the needs of advanced ECG specialist. Besides, a range of pre-loaded test protocols for each software module allows you to feel confident very quickly.

Due to such complex approach our ECG machines were used to assess the exercise capacity of astronauts and to monitor the health status of polar explorers.

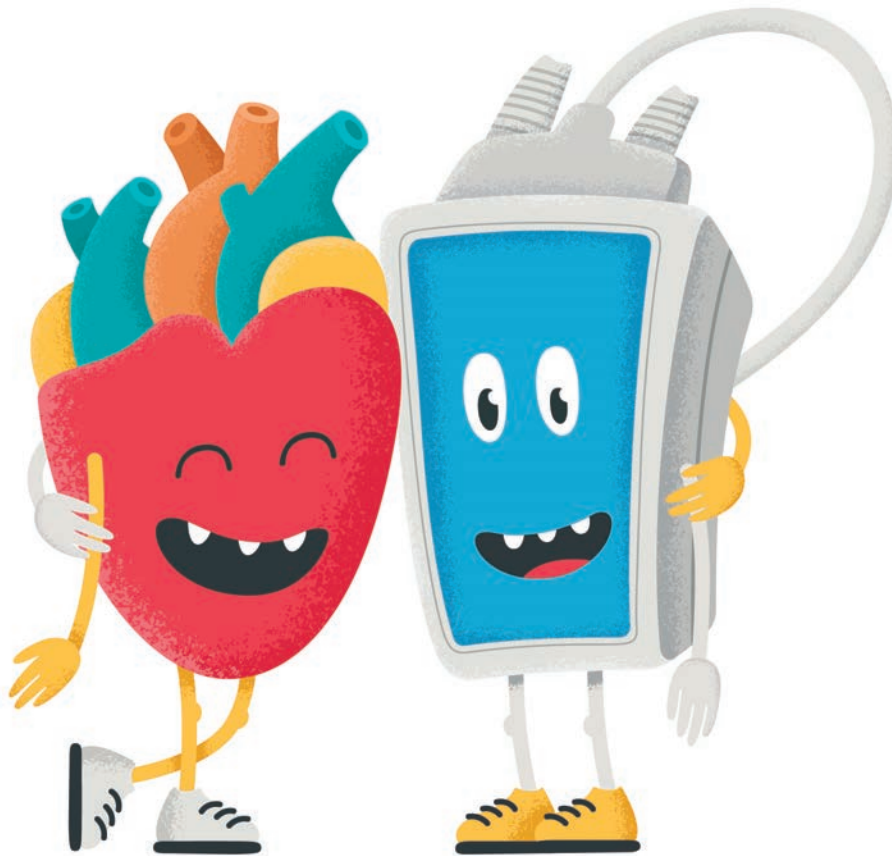
The hardware platform in synch with software modules is intended for all facets of ECG. The successful line of ECG products allows you selecting the solution just for you: from most simple up to professional one.

Our Poly-Spectrum-8/EX digital ECG system is an optimum choice for any challenge. It integrates the complete suite for ECG algorithms and allows performing rest ECG test, exercise ECG test, HRV analysis and supervise the trainings for cardiac rehabilitation.





# APPLICATION



## ▶ QRST

Routine ECG screening

## ▶ EXERCISE ECG

Diagnostics of coronary artery disease (CAD)

## ▶ VLP, QT

Evaluation of sudden cardiac death risk after myocardial infarction

## ▶ PWV

Assessment of arterial wall stiffness in hypertensive patients

## ▶ HRV

Evaluation of the autonomic regulation in patients with diabetes, arterial hypertension, etc.

## ▶ ERGOSPIROMETRY

Functional performance testing in athletes and workers exposed to occupational hazards

## ▶ REHABILITATION

Rehabilitation and physical training of patients after myocardial infarction or cardiac surgery

# MAIN SPECIFICATIONS

## Multi-purpose

Our Poly-Spectrum-8/EX digital ECG system is a winning combination for clinical ECG testing. It is specially designed to offer the maximum ECG performance, streamline the workflow and maximize patient throughput. The device provides 12-lead ECG and incorporates the extra channel to record respiratory rate and rhythm. Besides, the device can be equipped with optional software modules to ensure the advanced clinical ECG testing.



Airflow sensor



Standard ECG cable



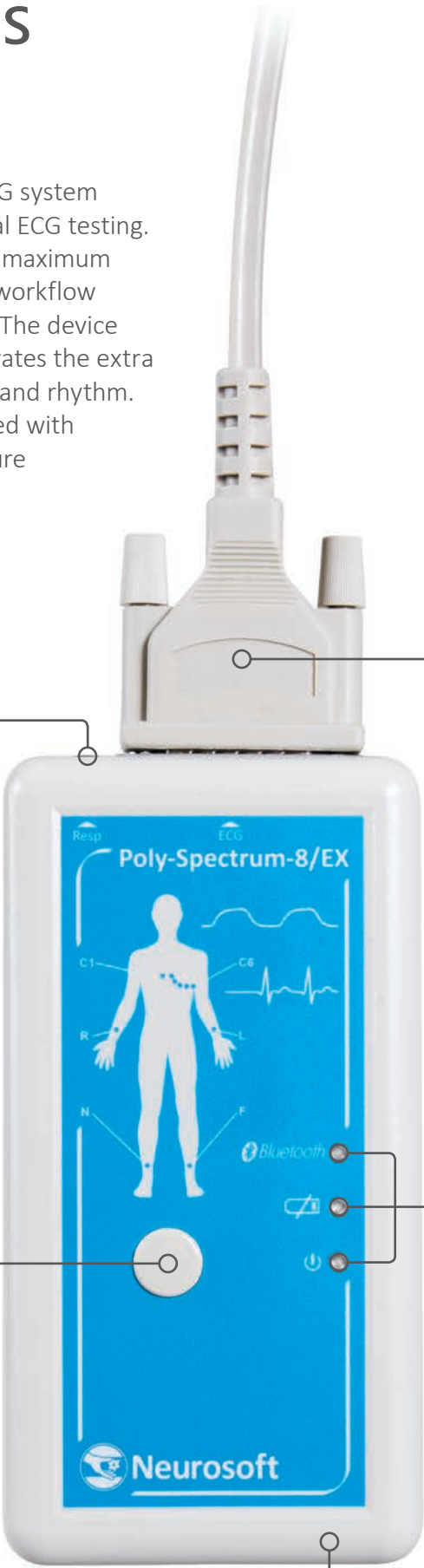
On/off button



Device state indicators



Two batteries of AA type





## Standard ECG Patient Cable

The ECG acquisition is done via the high-quality ECG patient cable with the standard lead wires. The cable length is just 130 centimeters that minimizes the noises at the obtained ECG traces.

We do not embed the cables in the device and do not produce our own dedicated ones. You are free to select the accessories!



130 cm

## Wireless

Poly-Spectrum-8/EX fuses the advanced technologies with robust hardware to provide you with unmatched signal quality during exercise testing. The obtained ECG is free from movement artifacts and noises due to short high-quality lead wires. The ECG data is sent via Bluetooth. At that the communication range within the direct visibility is not less than 8 meters.



≈8 m



<200 g

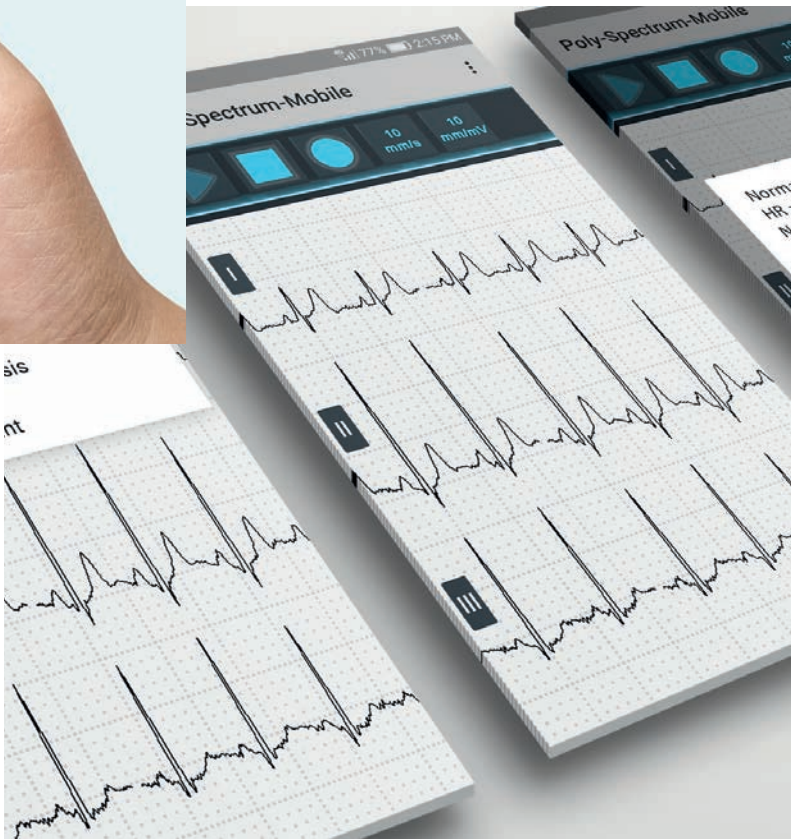






### Android Compatible

Poly-Spectrum-8/EX features the support of Android OS. The obtained ECG findings can be retrieved and managed on the PC with Windows OS, any smartphone or tablet with Android OS. The mobile app can be downloaded right now.



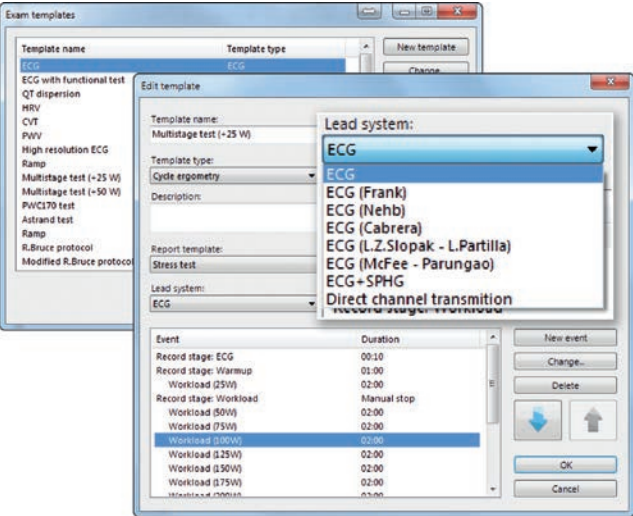
### Perfect Solution for Outpatient Use

The outpatient cardiac testing can be easily done with Poly-Spectrum-8/EX! The portable device and the set of required accessories are supplied in the specially designed case with total weight of 3.5 kg. Using the smartphone or tablet you can record ECG at any site with maximum speed and diagnostic accuracy as all you need is in your hands. Just charge the batteries!



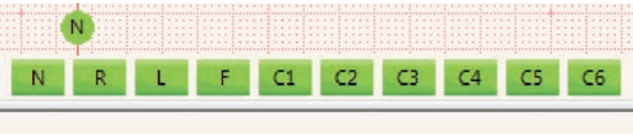
44×35×19 cm

# POLY-SPECTRUM.NET FEATURES



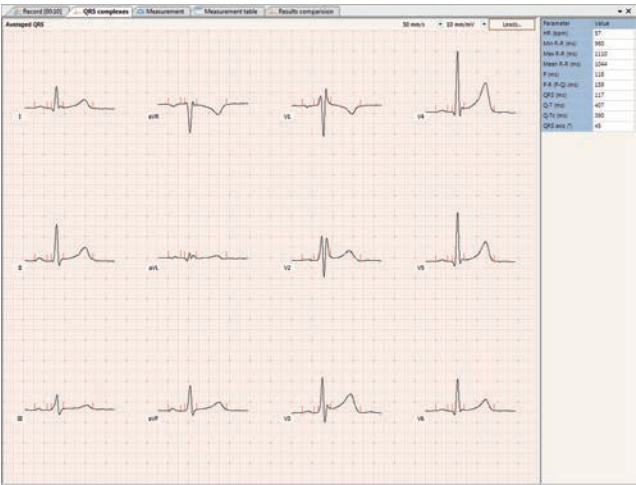
## Pre-set Protocols

The software incorporates the pre-set protocols for all ECG tests: HRV, resting, exercise ones, etc. However, the protocols are flexible and you can customize them by specifying the test duration, lead system and other parameters. The software supports the electrode placement in the following lead systems: Einthoven-Goldberger, Frank, Cabrera, Nehb, Slopak-Partilla, McFee-Parungao.



## Electrode Placement Quality

During the signal monitoring or acquisition you can control the electrode placement quality using the indicators in the bottom part of the screen. Each electrode is matched with the related cell of the color-coded lead bar. The green color indicates reliable contact and the red one shows the detached electrode.



## ECG Measurement and Interpretation

Poly-Spectrum-8/EX base delivery set includes Poly-Spectrum.NET/Analysis software module for ECG measurement and interpretation. This option allows you to review the selected QRS complex or the one averaged within a particular ECG fragment. The program automatically arranges the markers in the reference points. You can zoom in/out the selected QRS complex, measure it with the special ruler and reposition the markers manually.





QRS complexes: Table												
Summary table of measurement results												
Date/Time	HR (b/min)	R-A min (ms)	R-A max (ms)	R-A avg (ms)	P (ms)	P-R (ms)	Q-R (ms)	Q-T (ms)	Q-Tc (ms)	Q-RS (ms)	Q-RS (ms)	Q-RS (ms)
02.04.2015 14:42:29	82	681	791	729	112	144	90	394	460	56		
11.09.2015 13:48:34	70	791	910	854	102	140	88	429	447	59		

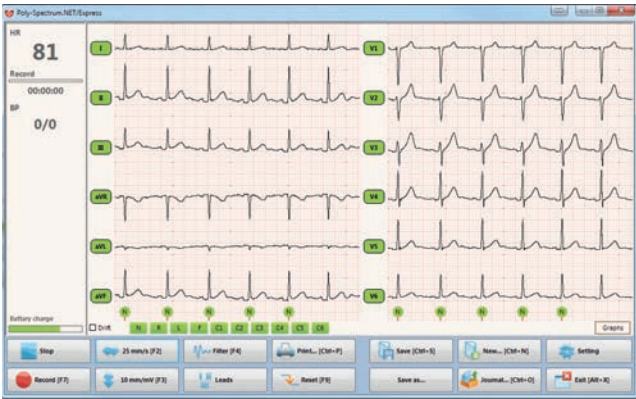
## Follow-up ECG

The ECG comparison feature allows tracing ECG measurement and interpretation results and analyzing the short- and long-term changes in patient’s ECGs at follow-up visits.

First name	Type	Creation date
Jane Smith	Stress test (Treadmill) [Ramp]	26.10.2017
John Smith	Stress test (Cycle ergometer) [Multistage test (+25 W)]	27.10.2017
John Smith	Electrocardiogram [ECG]	04.07.2014
Jane Smith	Electrocardiogram [ECG]	05.06.2014

## Exams Manager and Database

All patient cards with obtained ECG data are stored in the program database managed with Exams Manager software. Using Exams Manager you can review patient information, ECG findings including post-acquisition review, reports and conclusions. Besides, our database is seamlessly integrated to hospital information systems (HIS) via HL7 и GDT interface engines.

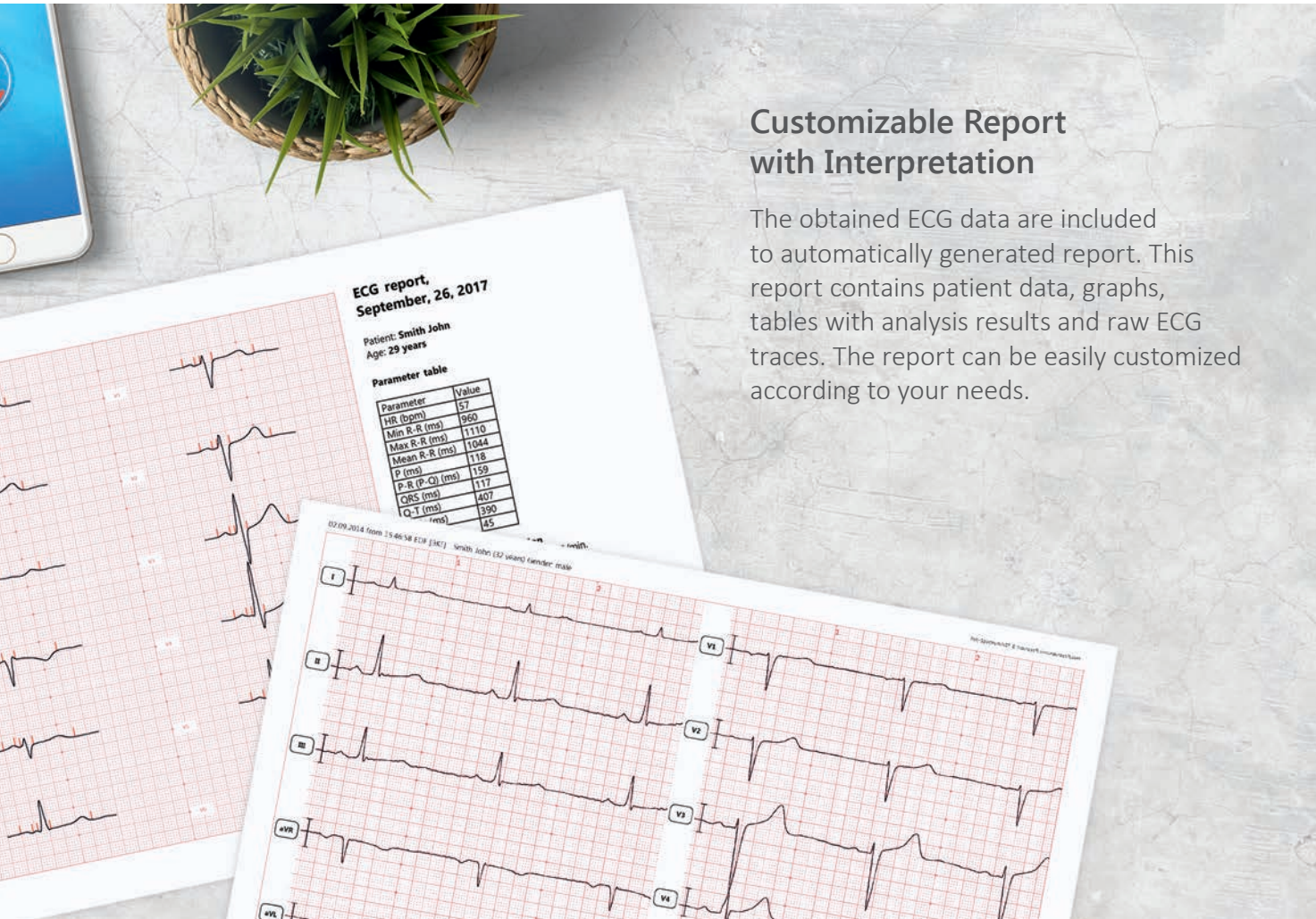


## ECG Acquisition and Analysis

During the routine ECG tests it is important to achieve optimum performance along with the reliable results and reduce patient discomfort as well as the examination time. It is easy with Poly-Spectrum.NET/Express software!

The program interface is user-friendly and simple both for desktop PC and touchscreen devices. You can review the record, save and print ECG data using several buttons on your PC, tablet PC or cell phone\*.

\* under Windows OS



## Customizable Report with Interpretation

The obtained ECG data are included to automatically generated report. This report contains patient data, graphs, tables with analysis results and raw ECG traces. The report can be easily customized according to your needs.

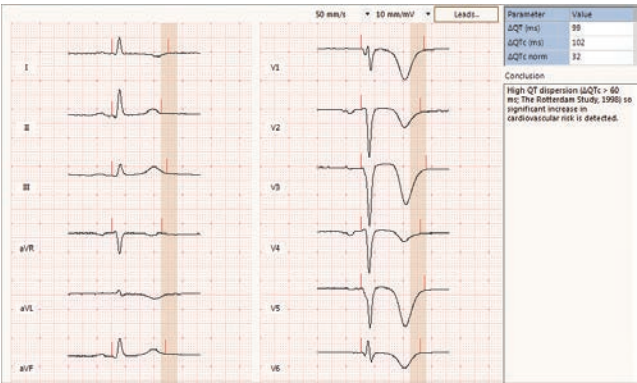
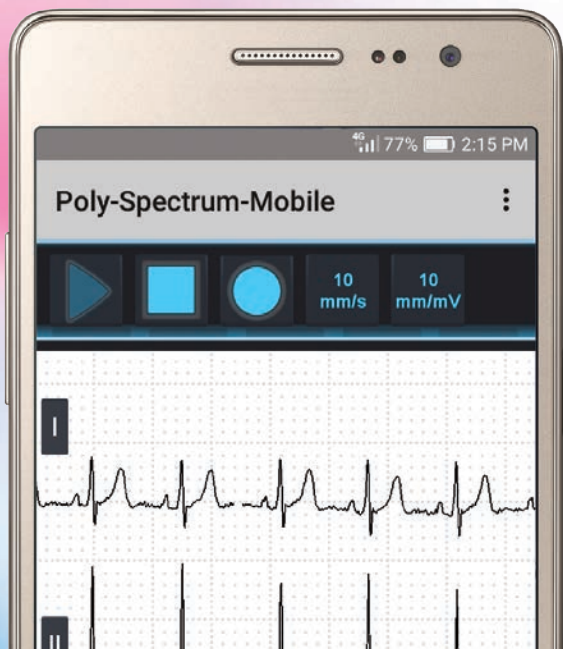


# OPTIONAL ANALYSIS MODULES



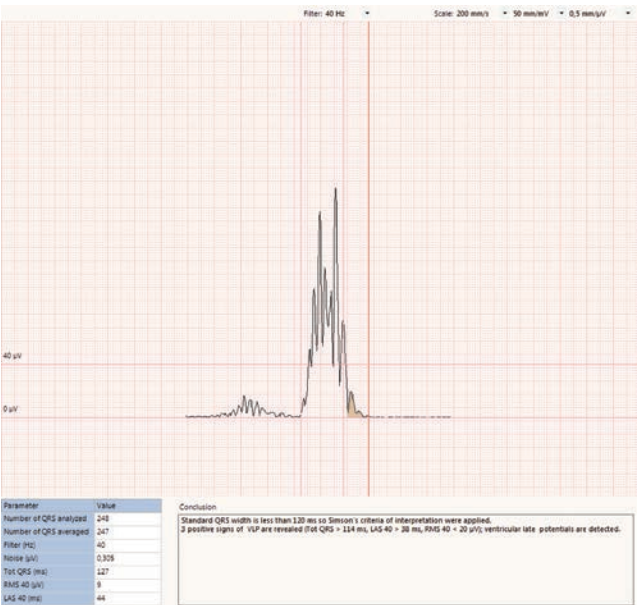
## Poly-Spectrum-Ergo

The software and equipment for exercise testing on bicycle ergometer and treadmill (stress ECG). It is used for primary diagnostics of coronary artery disease, evaluation of the exercise tolerance and prognosis in patients with heart failure (HF), determination of exercise performance in apparently healthy individuals.



## Poly-Spectrum-QT

The software and equipment to analyze the QT interval dispersion. It is used to assess myocardial repolarization inhomogeneity that shows the risk of ventricular rhythm disturbances and sudden cardiac death.



## Poly-Spectrum-VLP

The software and equipment to record and analyze the ventricular late potentials (VLP). It is used to evaluate the risk of fatal ventricular tachycardia and ventricular fibrillation in patients with heart failures.

## Poly-Spectrum-Mobile

The software to record ECG on outpatient basis and transmit the data to medical center in order to analyze the findings and print them out using the office printer. The software is compatible with Android OS and can be installed to any smartphone or tablet.

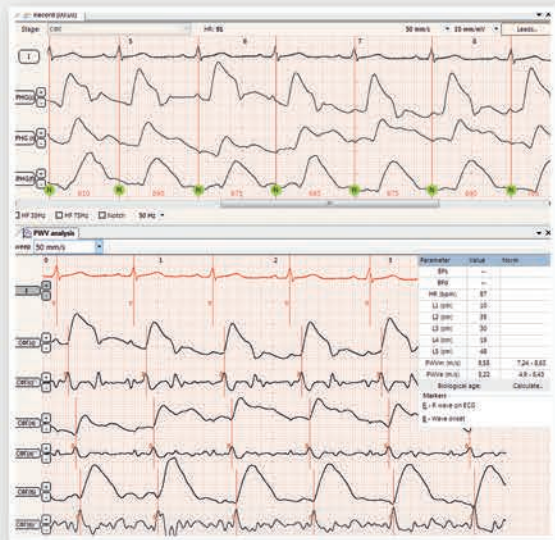
## Poly-Spectrum-Rhythm

The software and equipment to evaluate the neurohumoral regulation of heart function. It is done with HRV analysis test and D. Ewing test battery to clarify the diagnosis, select the treatment approach and optimize the therapeutic efficiency in a wide range of patients (including hypertensive and diabetic patients) and also to define the reserve capabilities of apparently healthy individuals.



## Poly-Spectrum-PWV






The software and equipment to analyze the aortic and arterial stiffness. It is done using the pulse wave velocity measurements to evaluate the cardiovascular risk in patients with arterial hypertension.





# ECG PRODUCT LINE



	ECG leads	Transe- sophageal Leads	Automatic Interpreta- tion	Detection of Cardiac Pacemaker Pulses	Interface	Application
 <b>Poly-Spectrum-8</b>	12	–	–	+	Wire: USB	Routine ECG test
 <b>Poly-Spectrum-8/E</b>	12	–	+	+	Wire: USB	Routine ECG test with measurement and interpretation, evaluation of autonomic status (HRV), QT, HR, PWV
 <b>Poly-Spectrum-8/EX</b>	12	–	+	–	Wireless: Bluetooth	Routine ECG test with measurement and interpretation, evaluation of autonomic status (HRV), stress ECG, QT, HR, PWV
 <b>Poly-Spectrum-8/G</b>	12	–	+	–	Wireless: Bluetooth, GSM	Telemedicine
 <b>Poly-Spectrum-12/E</b>	14	2	+	+	Wire: USB	Routine ECG test with measurement and interpretation, transesophageal ECG stress ECG, QT, PWV



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