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Computer electrocardiograph for complex examination of patient's cardiovascular system with functional tests feature.

Registration electrocardiogram

Computer electrocardiograph «Cardiotest» allows to register 12 channels standard ECG, ECG in the lead system by Neb and Frank.

For more convenient doctor's work during patient's cardiological investigation it is provided the possibility of varied information input about him/her, e.g. his/her work phone number.

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Native curve is kept at any case and during review philters' setting can always be replaced.

During ECG registration a HRF current value and rhythmogram are shown on the monitor.

Simultaneously with electro-cardiogram registration it is possible to make low-key review any of the registered complexes in Lens regime.

В режиме анализа ЭКГ предоставляются следующие возможности:

In regime of ECG analysis the following opportunities are suggested:

- *Survey of recorded tape*
- *ECG Contour analysis with automatic tags pointing. Calculation of amplitude time parameters of any cardiocomplex.*
- *Construction of amplitudes value tables and ECG signals duration by 12 leads. Definition of electrical axis vector direction. Pointing and analysis of representation ECG complex in all recorded leads.*
- *Automatic electrocardiogram description.*

Survey of recorded tape

Foe review of all registered ECG the possibility of automatically or manual tape pan is provided. Rhythmogram will help to find and look through an interesting image patch with the only click one can proceed heart contraction chosen.

For artifacts deleting there is a wide set of plain and complicated tools as well. ECG field which can not be analyzed is pointed out on the tape by way of background and signal color change.

During ECG image sequence of leads outlet can also be changed, change of their place and disconnection any of them as well.

Dialog box "Lens"

For electrocardiogram analysis ECG-complex by one lead is chosen. At the same time applied on the ECG outlet region plotting paper allows to appreciate complex parameters without any difficulties.

The system point tooths PQRST automatically out and calculates their amplitude temporal characteristics.

If necessary pointed tags by program can be easily corrected manually.

Moreover using instrument "Compasses", amplitude and duration in any ECG couple of points can be measured.
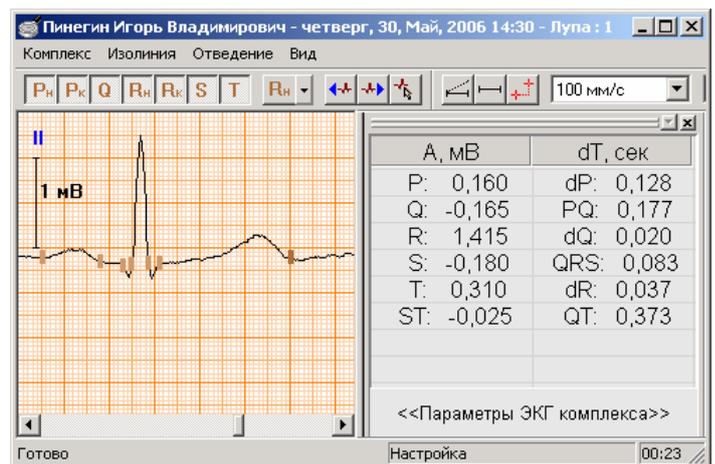
Dialog box "Complex"

n this dialog box the chosen complex by all leads and table of amplitudes value and duration of ECG signal is shown on the screen. Tags are marked automatically with correction possibility in the dialog box "Lens".

After taken of integral characteristics of cardio-complex, electrocardiogram automatic description is made.

Without leaving dialog box "Lens" or "Complex" it is also possible to look through and review any of the former or next complexes.

If it is necessary to print the parameters of this complex, by the following command "Print" printer will print on the piece of paper electrocardiogram and table of duration and amplitudes of its elements.

Heart rate variability analysis (HRV)

During heart rate variability analysis the system gives the results by the following methods:

- time analysis (statistic);
- analysis of wave heart rhythm structure;
- scaterogram analysis;
- Baevsky's variation pulsometry.

In the dialog box of HRV analysis the results of several different ECG fragments of one or a few patients can also be represented.

For each investigated field the following information is reflected:

- rhythmocardiogram (either HRF diagram or RR diagram);
- histogram of R-R intervals distribution;
- scaterogram;
- statistic rythmogram parameters;
- spectrogram's diagram;
- numeral spectrogram's parameters.
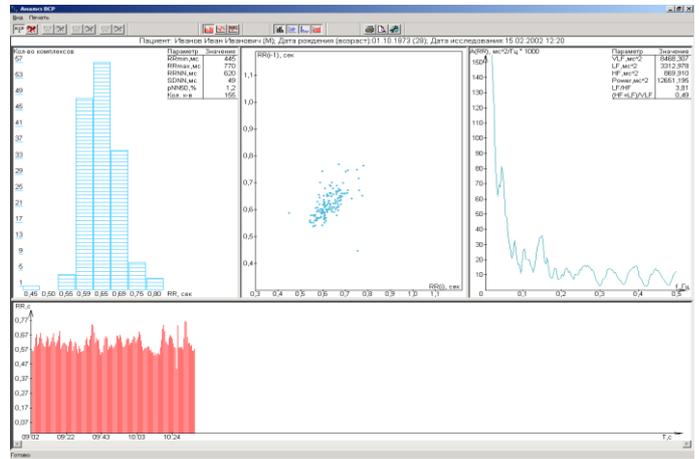
Loading test program ERGOTEST

For studying of condition of patient's cardio-vascular system during loads there is a possibility for porting of loading ECG program (veloergometry, stress test) **Ergotest**.

### ECG registration peculiarities in the system Ergotest:

The investigation is held by chosen protocol with level of loading and duration given. During ECG registration the segment shifting (aST) is calculated additionally. The system gives alarm signal and stops investigating when exceeding maximal HRF and aST values.

Peculiarities of processing and ECG analysis in the system Ergotest:

The system allows to make ECG comparative analysis at different levels of loading.

In the dialog box Trends ST the diagrams of ST segment trends according to all leads are shown. It is necessary to click to choose interesting ST change on the one of these diagrams, the needed ECG field will appear on the screen automatically.

Dialog box HRF+ST+W+AP gives integral characteristics of all loading test and contains HRF diagrams, ST segment shifting by the chosen lead, loads (W), signs of arterial pressure measurement (AP) and arrhythmias found by system. Clicking on interesting points one can also see on the tape the necessary ECG fragment. Fields containing artifacts will also be pointed here.
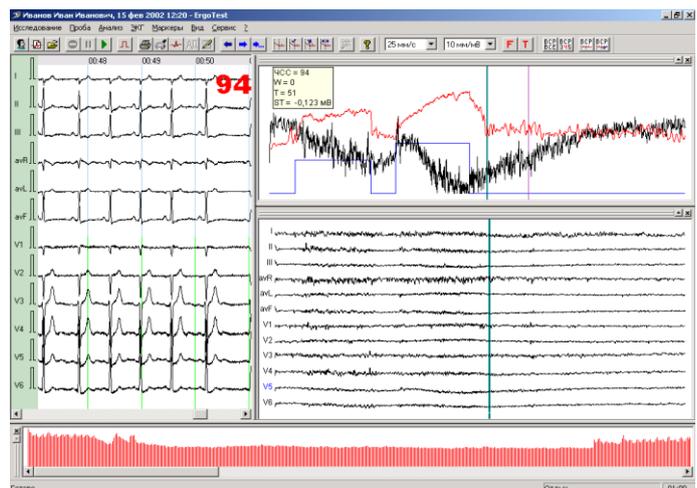
Besides diagrams in different colors here it can be also seen instantaneous (matching to one chosen complex) values of HRF, W, aST, AP and the moment of time.

Data safe

Information about patients, recorded ECG and results of its processing are kept in database. There is a full set of functions for convenient and fast work with ECG files of substantial range.

Making conclusion and printing

Due to the setup system the imprint form of investigation can be formed according to one's account:
- electrocardiogram with chosen amount of channels and given scanning rate and amplification;
- image show of chosen or representation cardiocomplex in all recorded leads and table of its amplitude time parameters;
- ECG with the results of mathematical analysis of heart rate variability;
- automatic ECG description;
- conclusion on editing model.

The possibility of entering of any textual information as comments for records made with the use of text code is provided.

Supply set

CG amplifier with fastening holder	Veloergometer/running track (for system *ERGOTEST*)
Electrode set	Gel for ECG-investigations
Patient's electrode cable	Technical documents
Set of electrodes for system *ERGOTEST*	