

COMPLEX TEST SITE

FOR DIAGNOSIS OF CARDIOVASCULAR

LAN-01 METABOLISM

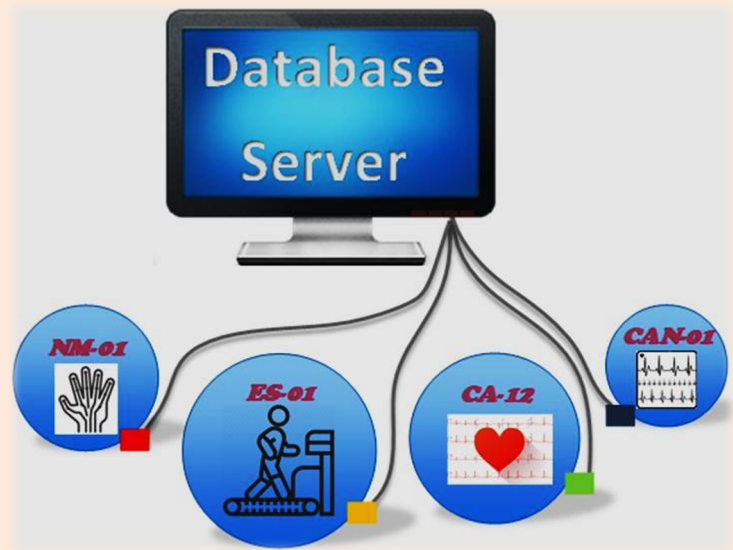
LAN-01 complex test workstation includes the measurement systems (CA-12, CAN-01, NM-01, ES-01) of the company.

Workstations are controlled by a high-performance server with a database manager.

The measurement and evaluation software runs on the server. Each measuring station handles the sensors and the mapped waves, only.

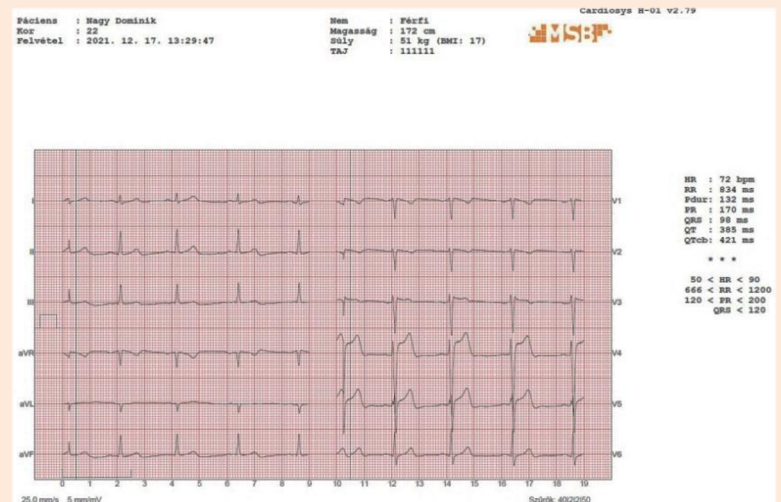
Tests can be performed at the assistant level qualification. The online automatically evaluated data can be printed out in medical report format.

The system has an integrated **Database Management Software** to manage the primary waves and the evaluated data



Modules of the workstations

CA-12. module: ECG display on 12 channels online, storage with NIBP measurement. Automatic evaluation from averaged 10, 20, 60 s ECG recording cycles (RR, HR, HR-SD, P_{duration}, PR, QRS, QT, QT_{cb}). The evaluated data with the primary waves can be printed in medical report format. The primary waves are automatically stored with the evaluated data, linked to the patient ID. Stored waves can be reloaded and evaluated offline (ECG Averaged, QT, QT_V, QT_D, HRV_{T/F base}).

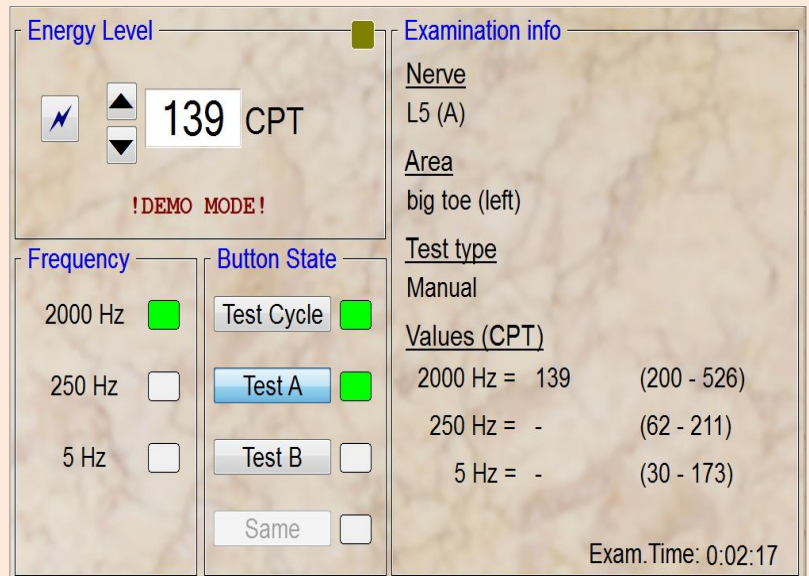


CAN-01 module: Cardiac autonomic neuropathy (CAN) is the most common age-related side effect of metabolic diseases. The measurement system applies Ewing test algorithms. **Parasympathetic** Deep Breath Test, Valsalva maneuver, Change in heart rate on standing up. **Sympathetic:** Change in blood pressure when standing up, Handgrip test. The measurement and evaluation are automated and the results are given as Guideline scores and can be printed. The evaluated data can be printed in medical report format. The primary waves are automatically stored with the evaluated data, linked to the patient ID. Stored waves can be reloaded and evaluated offline.



NM-01 module: It can be used for quantitative assessment of the state of peripheral sensory nerve function. Peripheral neuropathic tests are primarily performed on the limbs. The test is performed non-invasively with electrodes placed on the body surface. The system is suitable for testing all sensory fibres (based on the given map) using pulses of emitted sinusoidal current. The intensity of the emitted stimulus pulses can be varied between 0.01 and 9.99 mA at three fixed frequencies, depending on the fibres tested (thick myelin sheathless fibre 5Hz, thick myelin sheathed fibre 250Hz, thin myelin sheathed fibre 2000Hz). The software provides the current values in CPT accepted in clinical practice (1CPT = 0.01mA).

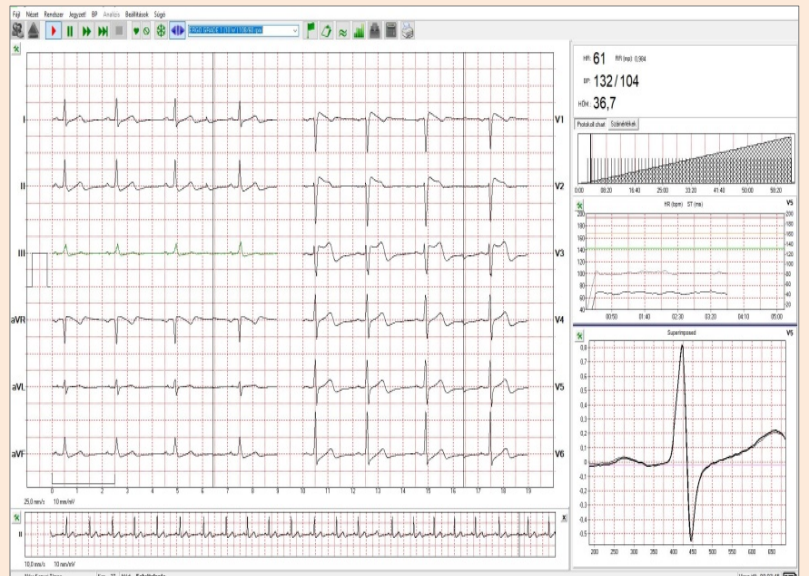
The measurement can be: Manual, Automatic. The evaluation is automated and the results are given in Guideline score values and can be printed in medical report format. The evaluated data is automatically stored linked to the patient ID and can be reloaded offline.



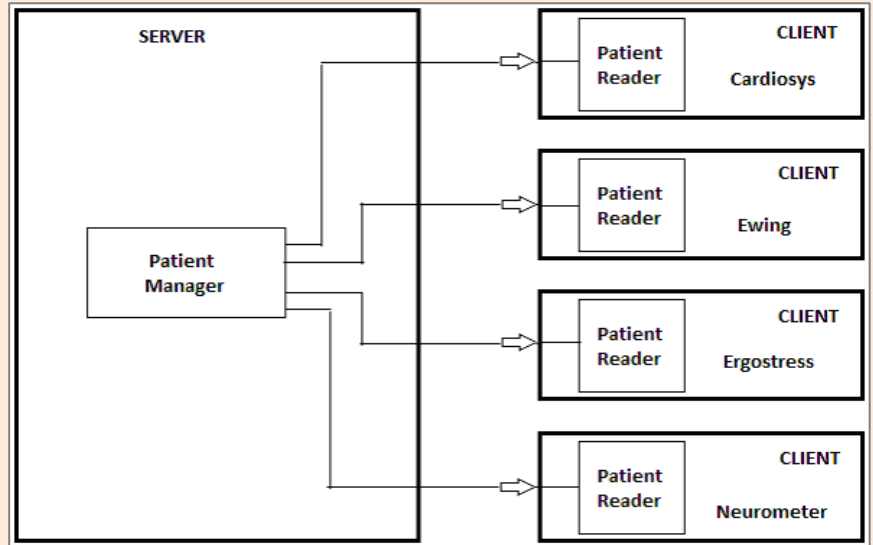
ES-01/TB module: The system is suitable for testing children (6 - 15 years) and adults depending on the design of the mechanical units (e.g. treadmill, bicycle). The measured primary curves (EKG I-II-III, aVR, aVL, aVF, V₁ - V₆, NIBP systole/diastole) are telemetrically transmitted to the display storage and evaluation central unit. During intense movement, the stable transmission of the biopotentials mapped by the sensors is ensured by the sensor-attachment mesh which is developed by the company. It controls non-invasive blood pressure measurement during exercise (validated up to 9 km/hour) on treadmill/bicycle, and displays online on 1 or 2 monitors. The trends of 2, 4, 8 calculated ECG parameters can be plotted optionally from the list. Arrhythmia alarm and load forecast. Standard-load protocols can be loaded and designed from the list (e.g. Bruce, Cooper, etc.). CORTEX ergospirometry can be connected to the system.

Trends can be displayed from the 12 leads based on 6 amplitudes (eg P, Q, R mV) and 11 times (eg QT, RR, ST msec) assigned to the load steps, as well as the averaged primary curve cycles of the pre-selected leads and NIBP values can also be displayed. The results can be printed and saved offline.

The primary curves are stored marked according to the load steps during protocol run. Stored primary waves can be reloaded and evaluated offline (pl. Avarage, QT_{RR/HR} as a function, QT_{variability}, QT_{dispersion}).

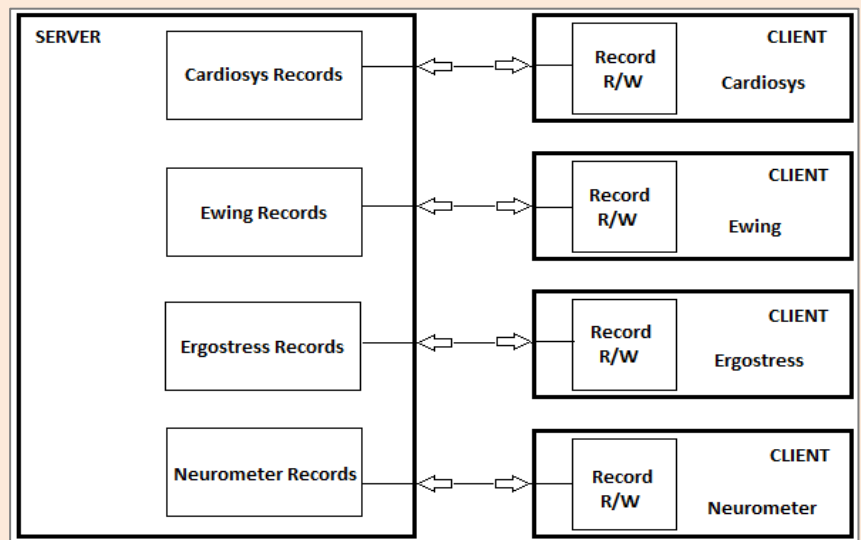


The server implements the coordinated control and data management of different function measuring systems connected to the LAN in the same airspace (test site), ensuring the protection of personal data. The measuring units - as peripherals - are connected to the server computer as a stand-alone computer via a 5-point switch and a fixed network. The software modules that control measurement are automatically downloaded based on the code sent when the peripherals log in. (see the following process figure).



The measured primary curves and the automatically evaluated data are transferred to the server computer via LAN Communication Port and stored in the personal data of the patient being tested (see the following process figure).

The server software controls the primary curve data traffic to dedicated workstations for the wide range of analysis required, as well as the print function.



LAN-01 test site equipments can be purchased and operated individually or in any other configuration, and the price includes network installation, technical commissioning, methodological training and 12 months warranty follow-up.

Key references

- Heim Pál National Paediatric Institute.
- University of Szeged Department of Internal Medicine.
- Semmelweis University Departments of Internal Medicine and Oncology
- Roy Academic Directorate of Diabetes & Endocrinology
University of Sheffield.
- Jean Verdier Hospital, France.
- Wörwag Pharma (Hungary, Romania, Baltics).
- Royal Prince Alfred Hospital University of Sydney