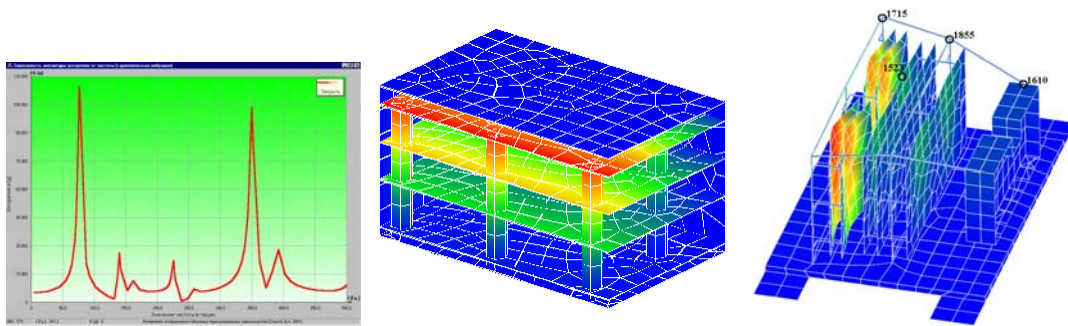


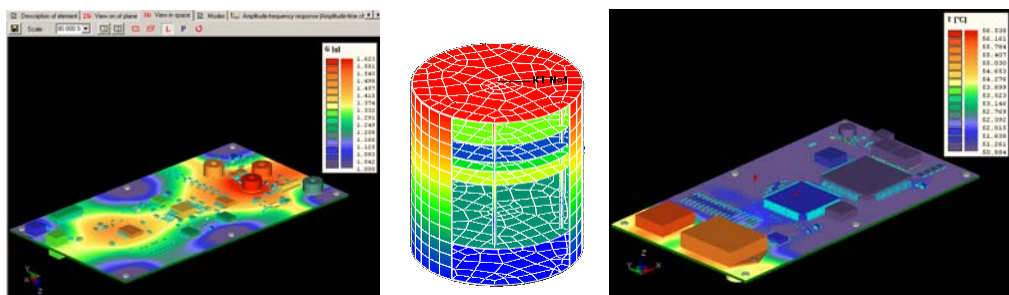
ASONIKA - Automated system for design and testing of thermal and mechanical properties of radio-electronic devices: Reliability and quality control simulation

<http://asonika-online.ru/UI-EN/DEFAULT.ASPX>

The computer program ASONIKA is designated for design and testing of thermal and mechanical stability and reliability of radio-electronics devices. Computational grid models implement macroscopic equations for heat transfer and mechanical forces in combination with 3D graphical interface, which allows design of complex devices and equipment (set of connected radio-electronic devices). ASONIKA is based on CALS (Continuous Acquisition and Life cycle Support) technology.



ASONIKA consists of series of modules, which can exchange data via a common interface. Each module can operate as independent computer program designated for solving the special tasks related to the device design and computing its properties. Each module has its own data base of materials, which can be expanded and modified in a dialogue mode:



- ASONIKA-T performs modeling of stationary and non-stationary heat transfer in arbitrary combination of connected radio-electronic devices mechanically connected as modules in an integrated set of equipment.

- ASONIKA-M performs simulation of mechanical properties of standard constructions of radio-electronic devices such as response on a) harmonic vibration; b) acoustic noise; c) single impact; d) repeated impact; and e) linear acceleration. The data of 3D-models in the format are presented in igs format, built in CAD-systems - T-FLEX, COMPASS, ProEngineer and SolidWorks.
- ASONIKA-V performs analysis of the mechanical characteristics of various sets of electronic devices built in boxes, racks and blocks mounted on vibration insulators under harmonic and random vibration, shock loads, linear acceleration, and acoustic noise. The subsystem enables computation and optimization of parameters of vibration insulators with the purpose of minimization of mechanical stress on the equipment.
- ASONIKA-TM performs simulation of thermal and mechanical characteristics of printed board assemblies and enables computation of steady and non-steady thermal effects at normal and low pressure and mechanical effects such as harmonic and random vibration, single and repeated impact, linear acceleration; and acoustic noise.
- ASONIKA-R performs design of mode maps of radio-electronic devices based on the standard regimes of performance and previously executed modeling.
- ASONIKA-B performs analysis of boxes, blocks, printing knots, and elements (Erie) for potential failures and non-failure operation.
- ASONIKA-UM performs integration of the engineering data for radio-electronic equipment design on the level of product manufacturing. The database of ASONIKA-UM contains data on device and equipment structure and manufacturing including production line organization and management and documents generated during the engineering process.