

FINELab™ QC system



FINELab is developed by Peter Larsen, because he was not satisfied with the measuring system he had been using for many years. He wanted to design a test system, which would be simple, reliable and working on a Windows platform. The system should cover his needs and nothing more.

The FINELab™ QC system is developed for production testing of drivers and speaker systems. Later a lab system will be available as an add-on module.

Hardware

The hardware has USB Control, 48V Phantom power and a built-in 25W amplifier. A Danish high quality electret microphone with gold diaphragm is available.

The system is very stable and reliable. Even external noise and vibrations have limited effect on the test curves.

Software

The FINELab main screen will give you both the frequency response and the impedance of the tested speaker at the same time. You can compare the tested speaker with a reference curve, measured from a “Golden” sample or imported as a reference curve, Fig.1.

The system has a very fast test execution with LogChirp and is extremely simple to run for the operator. If the tested speaker is outside the tolerance limits, the yellow line will indicate exactly where. The frequency response and the impedance curve can be saved individually.

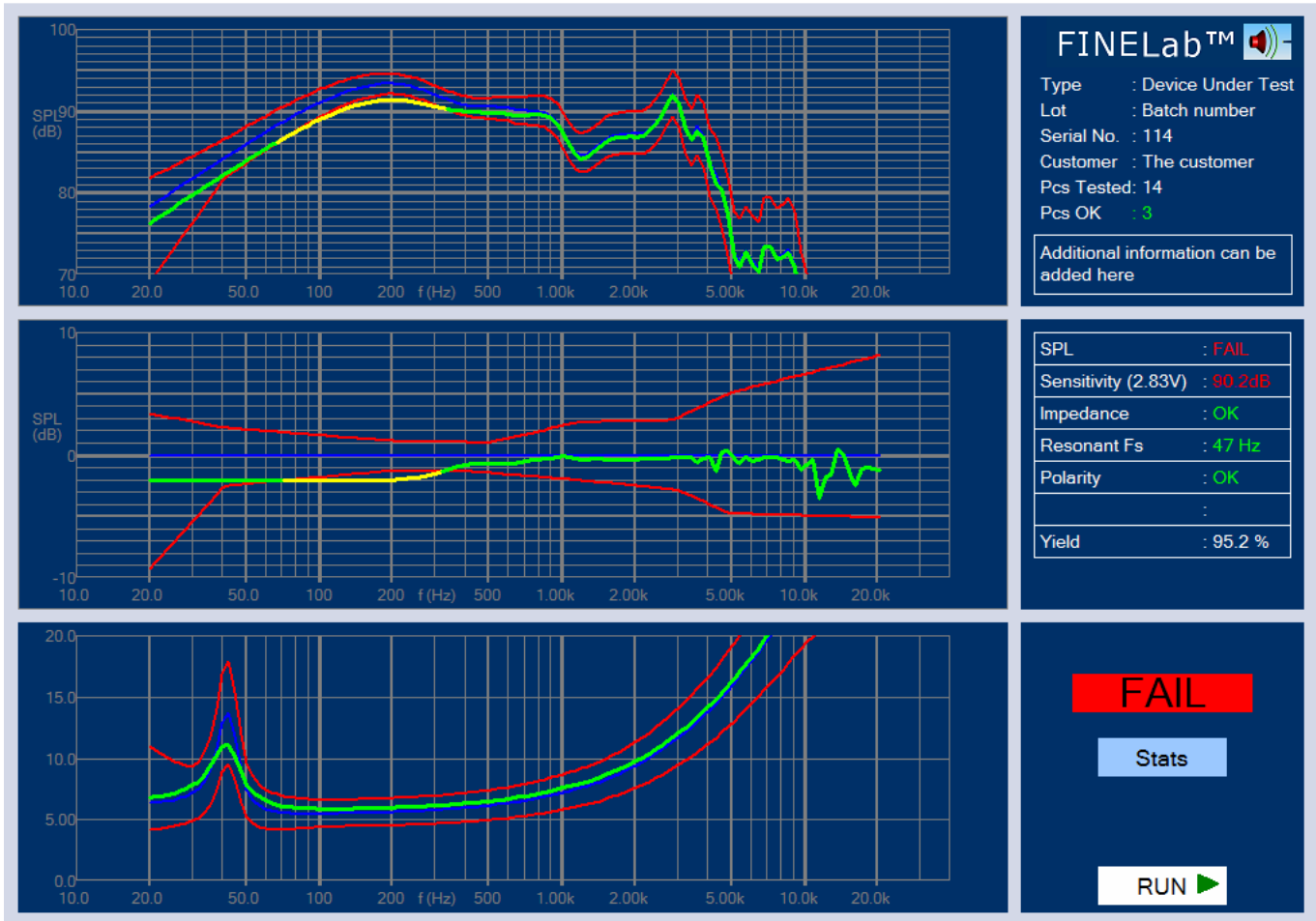
The tolerance limits may be set by the QA-Engineer directly or from the Golden Reference (Fig.2) by dragging the curve or individual points around the Statistical deviation from the average response.

The statistics is designed so you automatically will get the daily average and statistical deviation. The average will show as a violet curve, which is easy to compare with the blue reference curve, Fig.3.

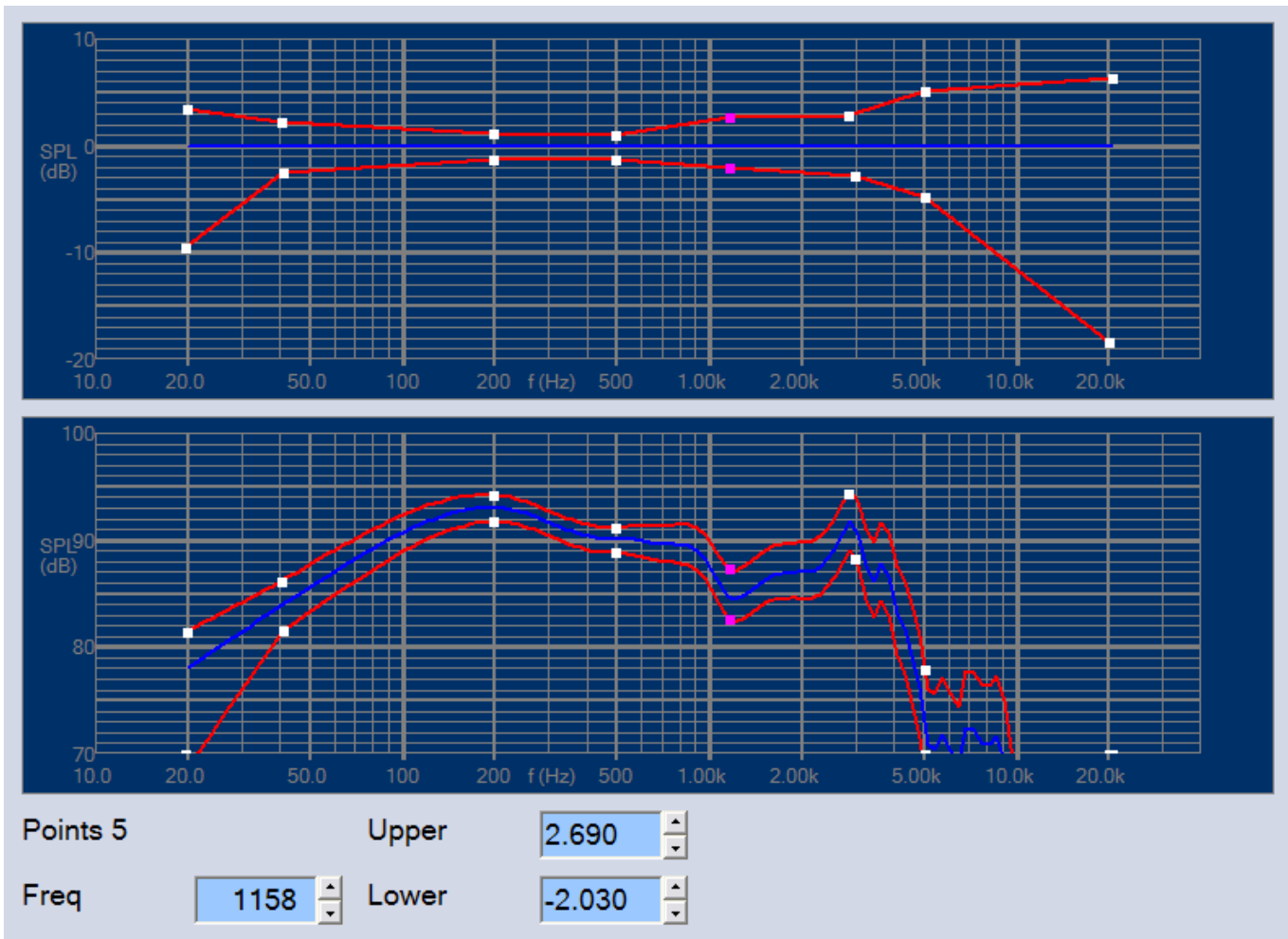
Interface

The test system is developed as a natural addition to the simulation programs from LOUDSOFT and works with the intuitive LOUDSOFT user interface.

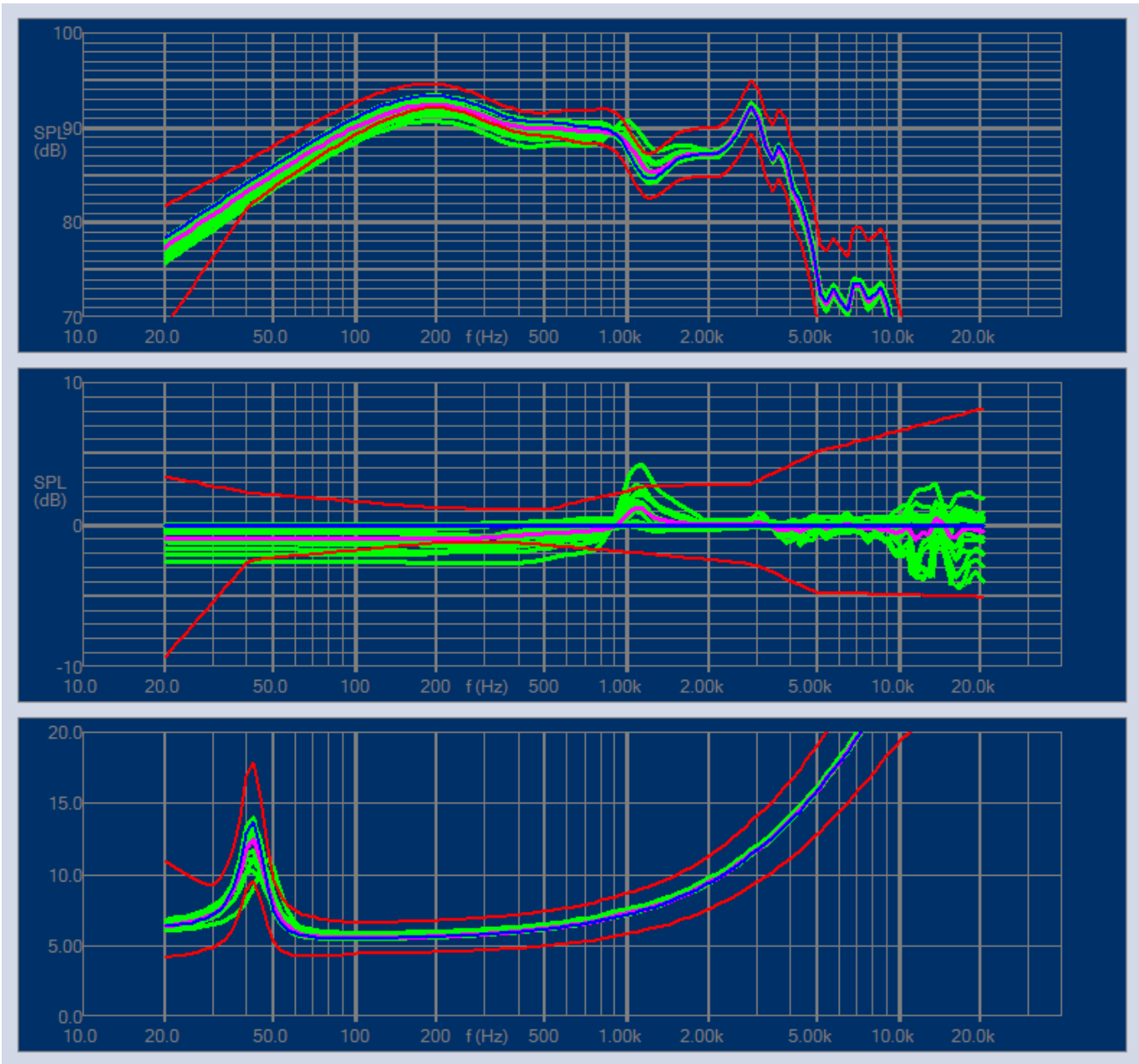
Individual responses and impedance curves may be exported to FINEBox and FINE X-over for example to investigate system response variations with actual drivers



1: FINELab Main Screen: The tested Speaker Failed (Yellow) due to low sensitivity



2: FINELab Tolerance Limits - Relative from Reference and with Dragging



3: FINELab Statistics. Calculated Average (Violet) and Reference Speaker (Blue)