RoeTest – Computer Tube Tester / Tube Measuring System
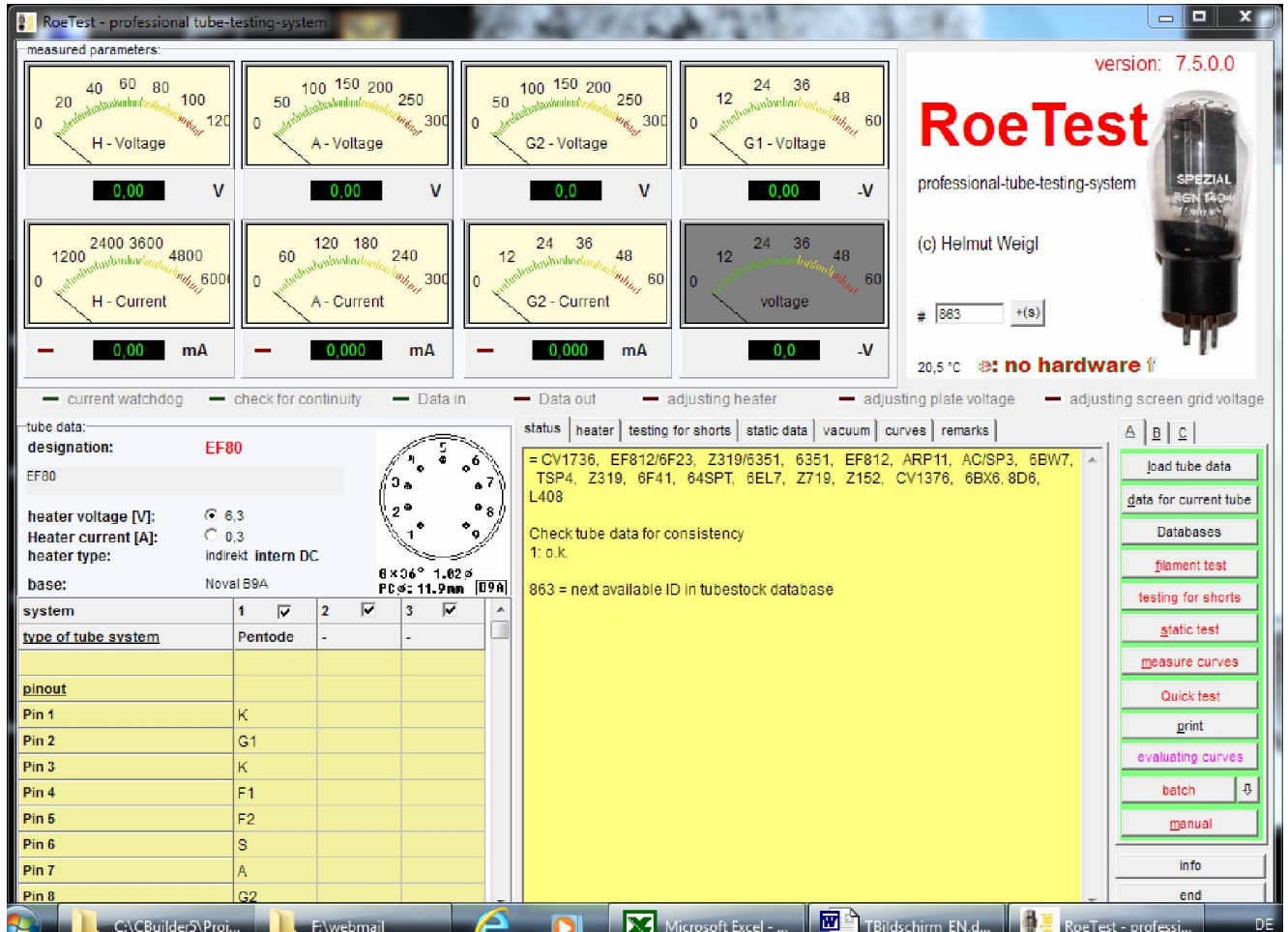## (c) - Helmut Weigl   www.roehrentest.de

english translation by Gerhard Oed (thank you very much to him)

## Description of the Main Screen:

Measuring Instruments:

At the top are the measuring instruments. The needle instruments are mainly used to show the tendency of a measure. The digital instruments below allow an exact reading of the measured value. Not used instruments will be grayed. Depending on the tube type the measuring instruments may be named differently (see database "RoeArt.dbf").

Tube Data:

At the left side there are the tube data as read from the database (button <laden Röhrendaten> <load tube data>). The data in the table may be overwritten temporarily, but will not be stored back to the database. To permanently store data, the data must be directly entered into the tube data database (→ RoeTestDatenbank)!

<u>Heater Control:</u>

Using the buttons

Heizspannung [V] ⦿	6,3
Heizstrom [A]: ○	0,3
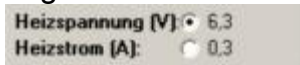
will select whether either the heater voltage or the heater current shall be regulated by the software. Heater current regulation is used for heater serial connected tubes (for example P-tubes, U-tubes,...). The default setting for the specific tube is stored in the RoeTest tube data database "Röhrendaten".

Further more a link to the corresponding internet address of the tube to www.Radiomuseum.org will be created (if there is not another internet address defined in the tube database – this is required if the tube has a different identification at the Radiomuseum).

Output Section:
In the lower middle there are all data output selections. To show a selection activate the associated tab (status, heater, testing for shorts, static data, vacuum, curves, remarks) by clicking on it.

Note: Data are only available if you have recorded data before or loaded stored measure data.

Mode Selection Tabs:
At the right side of the screen are the mode selection tabs that control the actions of the RoeTest. Many buttons are located on **three tabs (A + B + C):**

Tab Selection A:

<load tube data> Loads tube data from the databases
<data for current tube> Shows input mask for the actual selected tube (permanent storage of data)
<Databases> Starts the RoeTest database (management for tube data, stock, tube type, tube socket and regenerate type)
<Filament test> - Checks heater wire for pass
<testing for shorts> Checks tube for short circuits (tube in cold state, fine shorts up to ca. 100 KOhm will be recognized), Note: The tubes must be really "cold". Perform short circuit test either before heating the tube or some minutes after last heating (Explanation: Even if the heater is disconnected some tubes have the property to pass a small current long after having been heated; an example is the EABC80). Some nano amperes are sufficient to pretend a short circuit to the high impedance short circuit tester

<static test> Automatic measurement of the static tube data. Depending on the tube type different types of measurements are defined. These can be:
Anode-/Screen grid current, transconductance, inverse amplification factor, amplification factor, inner resistance, vacuum test.

<measure curves>
Fully automated recording of characteristic curves. For details see separate instructions.
<quick test> Quick test; only current measurements are taken. The tubes will be heated with increased heating voltage (sound tubes should endure this test – not recommended for valuable objects)
<print> Prints several test protocols, graphics, to a Windows compatible printer and print labels to a ZPL label printer
<evaluating curves> Opens a new window. Here multiple characteristic curves can be displayed and compared in one graphic (matching). Further on it is possible to calculate the distortion factor and much more.
<batch> Batch processing. Multiple steps can be automatically processed (see separate instructions)
<manual> Shows the window for manual mode. In this mode all voltages can be controlled using slides – also usable for tuning eyes.

Tab Selection B

<new, delete data> Cleans current recorded measure data (before testing/measuring the next tube of the same type the data of the previous measured data should be erased. If another tube type is selected, the old data will be cleared by default).
<load measured data> loads stored results from the folder, predefinied in options (this is important to compare the current data to the data of other tubes)
<load md tubestock> loads stored results from the attachments of the tubestock database.
<save measured data> Stores the recorded results to in options predefinied folder
<nixie> Special mode for 'Nixie'-display tubes. You need a special adapter for this mode (see separate hint)
<neon stabilizer+lamp> Special mode, Stabi/Neonlamp must be connected using a series resistor
<Zenerdiode> especially provided for Z-diodes with high voltage
<man.with resistor> Special manual mode with resistance in series with component.
With this mode for example bar-neon displays or stabilizers may be tested.
<curves by time> long time test
<identify> Software for interactive identifying unknown tubes
(see separate information)
<regenerate> Semi automatic regenerating mode

Tab Selection C:

<hot short> Tests the tube for short circuits when
heated (first a short circuit test in the cold state should be done).
A short circuit test of the electrodes against the heater connections
is performed.

<emission tester type 1> Simulation of a tube power tester (see below)
<emission tester type 2> Simulation of a tube power tester (see below)
<export.csv> exports measured data to file export.csv

<save curve parameters> save manually changed presets for curve tracing in parameter
files
<test> define up to two buttons in options2 for starting extern programs
<Optionen/Test> Some default settings and hardware related tests

<info> Info window
<end> Exits the program

<u>Special features:</u>

Depending on the tube type only enabled functions are possible.
(Example: there is no heater wire test with neon stabilizers... as there is no heater at all).
Which functions are possible is defined in the file "Roehrenart.dbf".

With characteristic curves the RoeTest tries to automatically set the ranges for
G1 voltage, Anode- or G2-voltage (table at left side of screen). The base for that
decision are the static tube data. In some cases manually intervention may be
useful. This can either be done by entering other values into the table (left side
of screen, not permanently stored) or by changes in the database RoeTest.dbf.