

Lin4WinXP Version 6.02 – Manual Update

New features:

1. PNG Image Output

PNG (Portable Network Graphics) files are now output instead of GIF files when results are uploaded to the Online Test Sheet Database or saved using the 'Save as Web page option' on the file menu. PNG is the open-source version of GIF encoding, which most browsers support. We made this change because a recent Microsoft Windows upgrade appeared to caused GIF images to be blocked unless they have been generated by an authorised programme such as Photoshop. Though GIF images are in widespread use their generation is copyright protected, which is why projects like Wikipedia use PNG and SVG (Scalable Vector Graphics).

2. Procedure Testing

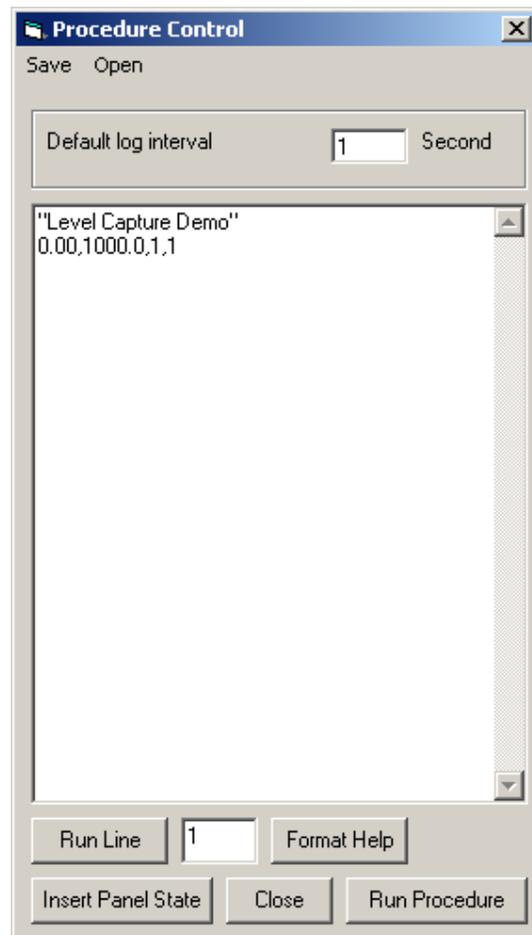
Four new buttons have been added to the main panel window, giving three new ways to log results. The most useful of these is Procedure testing, which carries out a series of measurements automatically, and complements Sequence testing. While the latter is best suited to the measurement of signal paths that are nominally flat, and provides automatic synchronisation over long paths between different measuring sets, Procedures are for detailed bench testing on equipment, for development purposes or routine quality control. The user sets up a series of measurements in a table, and clicks Run to log the results. The big difference from sequences is that autoranging is generally left active, and the measurement delay can be chosen to allow adequate settling time. This enables very accurate results to be obtained even with huge changes in level such as might occur when measuring the out-of-band response of a filter. Typical applications are:

- Filter and Equaliser testing
- Loudspeaker testing

A typical application is in testing an equaliser for frequency response at various settings. Instead of plotting the response, measurements are made at set frequencies, and the results pass-fail checked by applying a tolerance file. Depending on noise and headroom limitations, it is possible to just rely on autoranging, or to send 'inverse response' test tones with levels specified such that they should come out at 0dB.

Clicking **Procedure** will open the 'Procedure Control' window, in which each row lists a test in terms of Output Level, Output Frequency, Measurement function, Measurement Option. For example 0.00,1000,1,1 will set level option 1 on the measuring set and 0dB at 1kHz on the oscillator.

An easy way to list these measurements is just to set up each measurement in turn on the control panel and then click **Insert Panel State**. Then click **Run Procedure** and check that the results, which appear as a standard test sheet in the main window, agree with manual measurements. It may be necessary to alter the timings at the top of the window, or to insert extra delays on some measurements to obtain the most accurate results in the shortest time.



3. Special Commands

“**Heading [1]**” (any text in quotes) inserts a heading in the results sheet. Including a character in square brackets identifies the block of tests that follow, in the same way that segments are identified in sequence testing, so that tolerances can be applied using a tolerance file.

DELAY(1.5) Resets the settling delay to 1.5 seconds (any number of seconds can be inserted. The new settling delay is applied to all subsequent measurements unless changed by another DELAY instruction. While the default delay of 1 second will be adequate for many measurements, those involving large level changes or a change of function may need longer (2 or 3 seconds is usually adequate). Where speed is important, it is often possible to optimise the order of tests for fast settling, by bearing in mind that the rectifiers settle more quickly on rising levels than on falling ones.

PAUSE stops the test until any key is pressed to continue. Used with instruction headings like “Adjust PR1 for 0dB” this allows production procedures that include manual adjustments to be set up.

MUTE toggles the mute condition on or off. It is particularly useful for self-testing our test sets, as it allows the oscillator to be turned back on after selecting Noise (which normally mutes) in order to test the weighting curve and tone-burst responses.

READ0.00,1000,1,1 logs a value without sending a function command. Note that this must have the full instruction values on the same line. This avoids the fast settling or resetting of things like mute. It can be used to log levels in music using the PPM for example, and also for measuring the noise weighting filter after selecting noise and demuting.

SWITCHCOM(n) - switches active com port to port n where n is a number >0 and <10. This allows more than one test set to be controlled as, for example, when using an LA101 to calibrate an MS10.

AUTO toggles autoranging on or off. Used after an instruction line it fixes the range, allowing measurement of scale linearity on the MS10 itself for example.

RESET resets the test set. It is recommended that all tests start with RESET, otherwise spurious results may be obtained depending on the initial state of the test set when the procedure is run (for example it may be muted).

NORM normalises to the incoming level, such that all subsequent readings are relative to this level which is stored as reference level.

REL toggles between relative and absolute readings. Note that DIST measurements start by normalising, so any measurements made after a DIST instruction will be relative unless REL is inserted.

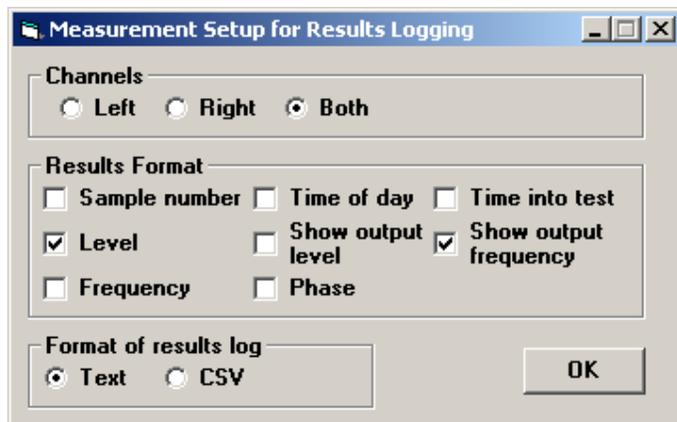
4 Other Facilities

Setup Opens the “Measurement Setup for Results Logging” window. These options customise the format of the results being logged for the three new forms of logging available (including Procedure testing as above).

The **Channels** options select which channels to record results for. **Both** indicates that results for both channels are required and the software will take care of any necessary channel changing for Crosstalk measurements etc.

The **Results Format** options select the information displayed in the results window for each recorded value. If a value is not available for example frequency when measuring noise a reading of -999.99 will be output.

The most useful output format will generally be the default **Show output frequency** and **Level**.

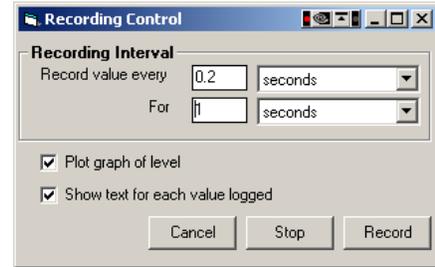


Capture

Captures an instantaneous level value for the currently selected measurement function and displays the results in the main results window. This is useful for fault finding or comparing values.

Record

Opens the 'Recording Control' window. This allows a series of rapid measurements of the currently selected function to be made. If **Plot graph of level** is selected a graph of the values against time will be displayed in the results window along with the text values. These can also be tolerance tested and tolerance arrows will appear on the graph. Note that the graph redraws as each measurement is logged. If the system is unable to redraw the graph quickly enough before the next measurement is required the real-time update will stop until all the measurements have been captured.



Bug Fixes and Minor features:

1. PNG image is created with the correct height and width – previously GIFs were generated with a fixed width and height.
- '2. Phase and swept distortion plots - previously were only correctly displayed when the device was connected.
- '3. Comments text can now be dragged and dropped between results sheets
4. The bounding box for drag and drop now remains around selected segment.
- '5. Fixed drag and drop loading of files over a network
6. Multiple instances of Lin4Win are now allowed – this allows any saved Lin4Win file to load Lin4Win directly when double clicked. It is also particularly useful when viewing results sheets off the website in Lin4Win as it removes the need to save them first. Simply click ([Click here to download Lin4Win file](#)) on the test results database followed by Open and Lin4Win will launch and open the file.
7. Save as CSV option added. This can be useful for the statistical analysis of a batch of results (e.g. production failure rates) using Excel or other spreadsheet applications.
8. Automatic modification of FREQU on MiniSonic results sheets to read FREQUENCY.