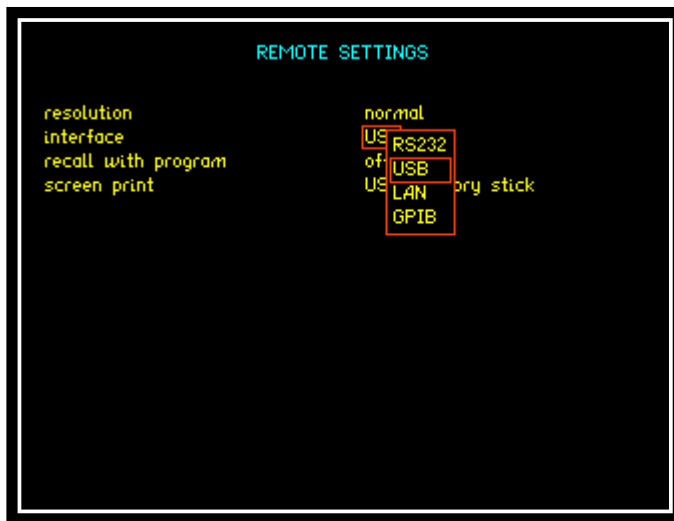


Before conducting any LCR tests with the PSM3750 + IAI using either the Kelvin fixture or Leads a compensation test must be performed please see section at the end of this guide

PSMComm2 Quick User Guide

Connection

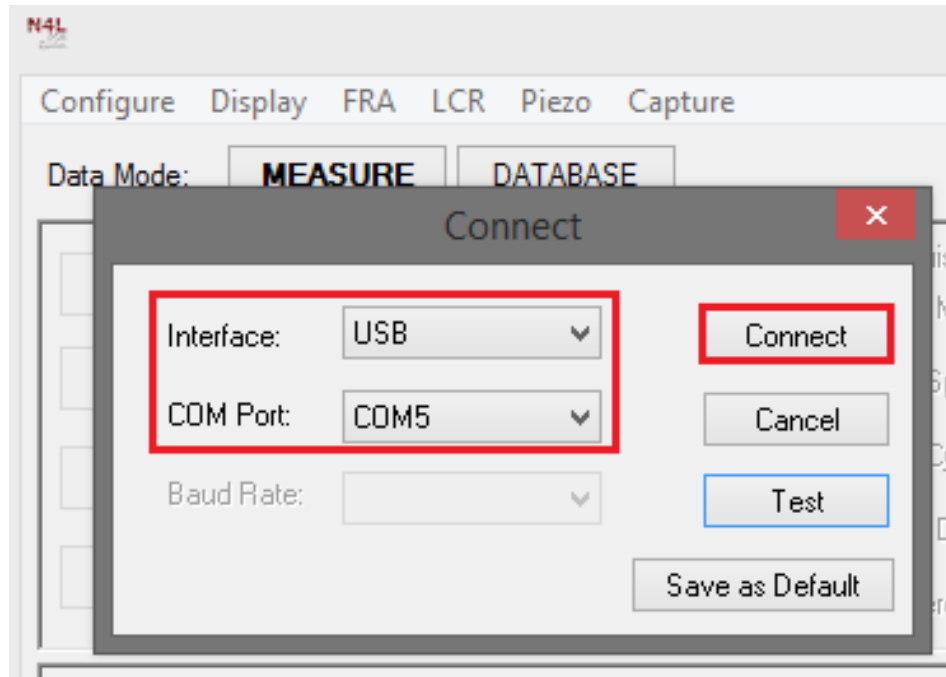
1. Set up the Instrument's interface to be compatible with connection lead between PC and SFRA



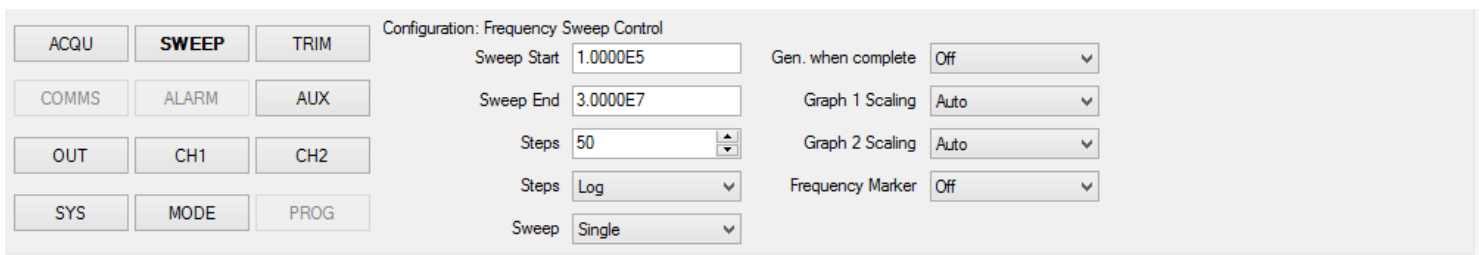
2. Open up PSMComm2 software v1_0e
3. Display screen will appear as below. You will now be required to connect the instrument to the PC
4. Click on the “Configure” icon in the top left hand corner of the screen, connection button will appear, click on connection



5. This will open up the connection box as shown

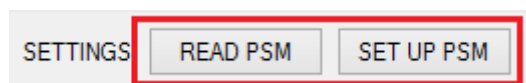


6. Select the interface from the dropdown selections (for this guide we used USB and Comm port 5)
7. Click on Connect
8. Instrument will connect with PC software
9. Once the connection is made this will then allow the user to configure all the PSM3750's parameters remotely as per the screen shot below.



In the screenshot above we have set the sweep to be undertaken to start at 100 KHz and end at 30MHz within 50 steps.

Once all of the parameters have been set all this information needs communicating to the instrument this can be done remotely by pressing the "SET UP PSM" button

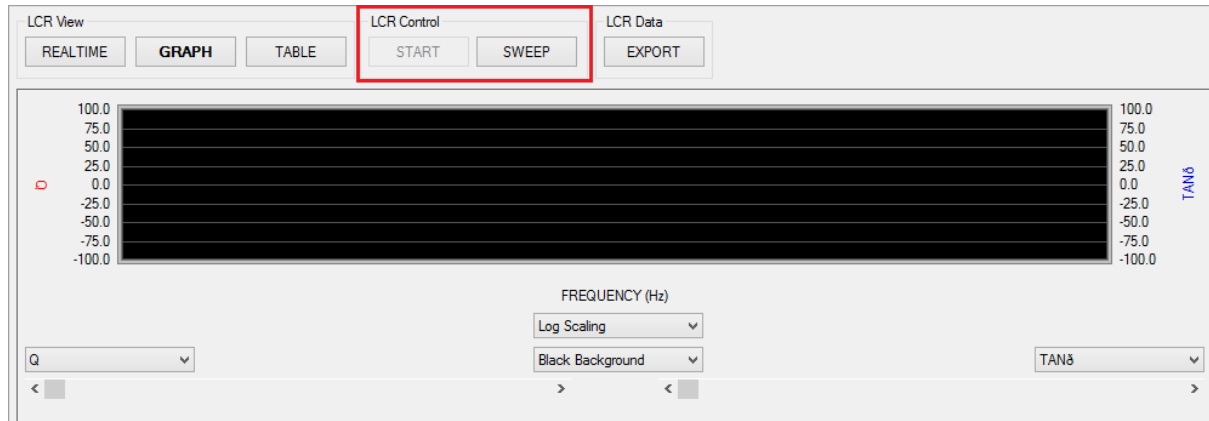


Alternatively if any settings have been changed within the PSM3750 these changes can be communicated to the software by pressing "READ PSM"

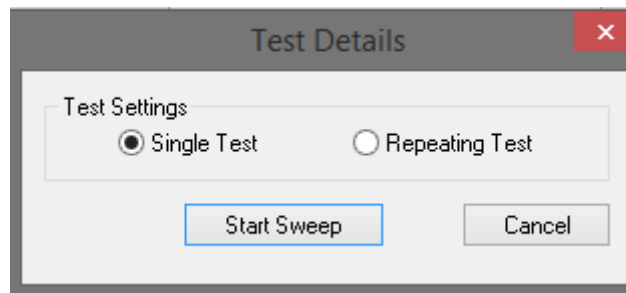
Sweep Details

To conduct a sweep via PSMComm2

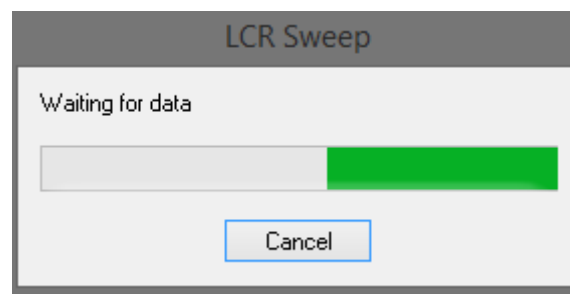
1. Click on “SWEEP” button



2. This will open up a “Sweep Test Details” screen
3. Select either a single or repeating test

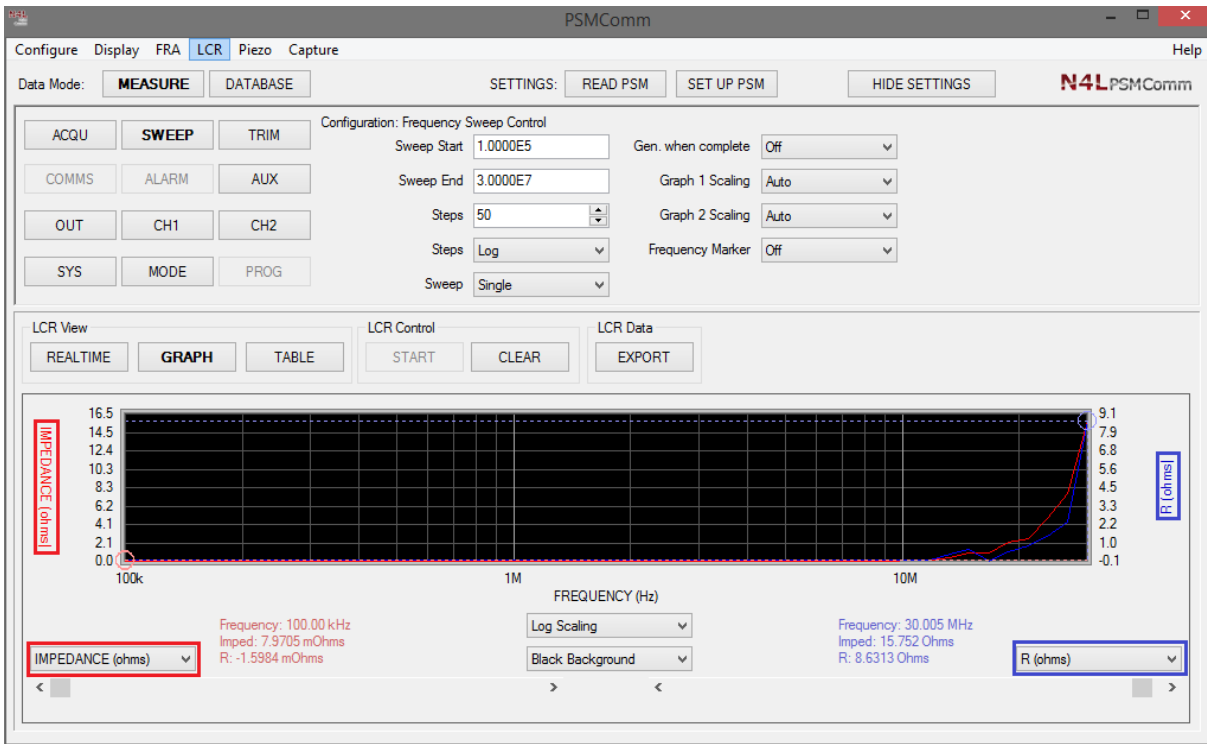


4. Press “Start Sweep” sweep will be conducted on DUT over previously configured frequency parameters
5. Once a sweep has started the following box will be displayed



6. Upon completion the user will be able to view the data either within a table or graph format as shown below

Graph Data



Graph Data to be displayed can be selected by using the drop down boxes as shown above

Table Data

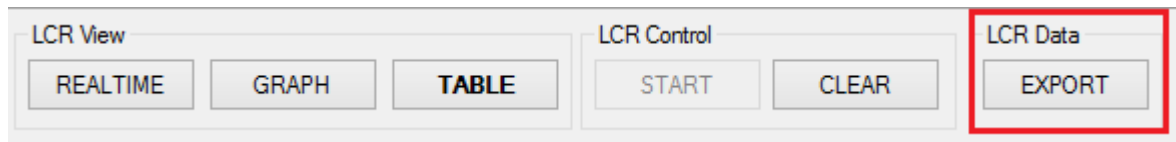
The screenshot shows the PSMComm software interface with the 'TABLE' view selected. The table displays measurement data for 14 steps, including Frequency (Hz), Q, Tanδ, Impedance (Ohms), Phase (°), L (H), C (F), and R (Ohms).

Steps	Frequency (Hz)	Q	Tanδ	Impedance (Ohms)	Phase (°)	L (H)	C (F)	R (Ohms)
1	100000.0000	4.88520E+000	2.04700E-001	7.97050E-003	-1.01570E+002	-1.24280E-008	2.03820E-004	-1.59840E-003
2	112350.0000	3.57260E+000	2.79910E-001	1.23990E-002	7.43630E+001	1.69160E-008	-1.18640E-004	3.34220E-003
3	126220.0000	1.92710E+000	5.18930E-001	3.34220E-002	-6.25740E+001	-3.74080E-008	4.25070E-005	1.53940E-002
4	141800.0000	6.86910E-002	1.45580E+001	1.11810E-002	1.76070E+002	8.60010E-010	-1.46490E-003	-1.11540E-002
5	159300.0000	2.53230E-001	3.94900E+000	1.88660E-002	1.65790E+002	4.62690E-009	-2.15730E-004	-1.82880E-002
6	178970.0000	4.68410E-001	2.13490E+000	4.15540E-002	2.50990E+001	1.56750E-008	-5.04530E-005	3.76300E-002
7	201060.0000	5.50350E-002	1.81700E+001	1.77120E-002	1.76850E+002	7.70460E-010	-8.13260E-004	-1.76860E-002
8	225880.0000	2.69860E+000	3.70570E-001	9.25080E-003	6.96670E+001	6.11190E-009	-8.12260E-005	3.21450E-003
9	253770.0000	5.04770E+000	1.98110E-001	1.71950E-002	7.87940E+001	1.05780E-008	-3.71830E-005	3.34150E-003
10	285100.0000	6.15190E-001	1.62550E+000	8.17070E-003	-1.48400E+002	-2.39000E-009	1.30390E-004	-6.95920E-003
11	320300.0000	5.53670E-001	1.80610E+000	1.41480E-002	2.89720E+001	3.40520E-009	-7.25090E-005	1.23770E-002
12	359840.0000	8.11210E-002	1.23270E+001	2.42700E-002	-1.75360E+002	-8.67960E-010	2.25390E-004	-2.41910E-002
13	404260.0000	4.97910E-001	2.00840E+000	2.31280E-002	2.64690E+001	4.05840E-009	-3.81910E-005	2.07040E-002
14	454170.0000	1.48750E+000	6.72280E-001	1.63090E-002	5.61880E+001	4.74300E-009	-7.58920E-005	9.09900E-003

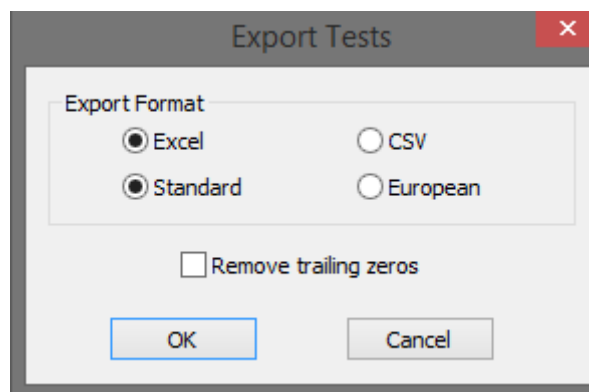
Exporting Data

To export the tabular data to an excel spreadsheet

1. With the table data open click on “EXPORT” button



2. Export Tests box will be displayed

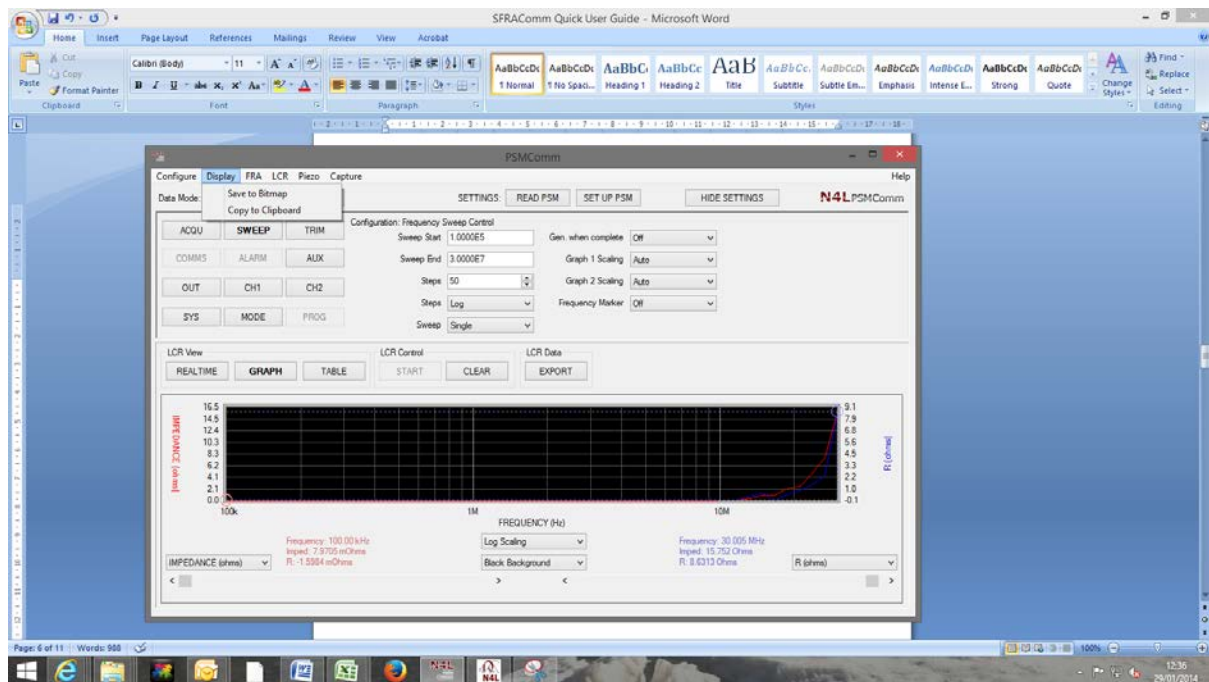


3. Select which format you require the data exporting into and press “OK”
4. Excel spreadsheet will open up with all data present

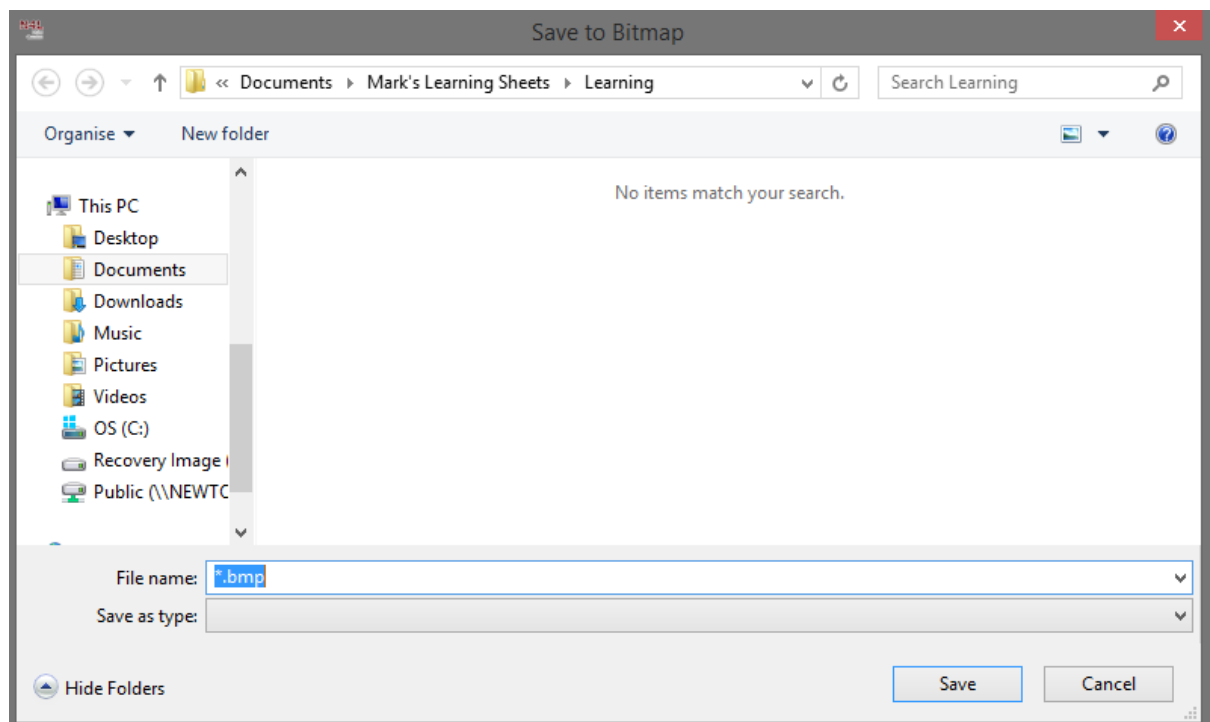
	A	B	C	D	E	F	G	H	I
1		LCR Sweep							
2	Step	Frequency (Hz)	Q	Tanδ	Impedance (Ohms)	Phase (°)	L (H)	C (F)	R (Ohms)
3	1	100,000.00000	4.88520	0.20470	0.00797	-101.57000	-1.24280E-08	2.03820E-04	-0.00160
4	2	112,350.00000	3.57260	0.27991	0.01240	74.36300	1.69160E-08	-1.18640E-04	0.00334
5	3	126,220.00000	1.92710	0.51893	0.03342	-62.57400	-3.74080E-08	4.25070E-05	0.01539
6	4	141,800.00000	0.06869	14.55800	0.01118	176.07000	8.60010E-10	-1.46490E-03	-0.01115
7	5	159,300.00000	0.25323	3.94900	0.01887	165.79000	4.62690E-09	-2.15730E-04	-0.01829
8	6	178,970.00000	0.46841	2.13490	0.04155	25.09900	1.56750E-08	-5.04530E-05	0.03763
9	7	201,060.00000	0.05504	18.17000	0.01771	176.85000	7.70460E-10	-8.13260E-04	-0.01769
10	8	225,880.00000	2.69860	0.37057	0.00925	69.66700	6.11190E-09	-8.12260E-05	0.00321
11	9	253,770.00000	5.04770	0.19811	0.01719	78.79400	1.05780E-08	-3.71830E-05	0.00334
12	10	285,100.00000	0.61519	1.62550	0.00817	-148.40000	-2.39000E-09	1.30390E-04	-0.00696
13	11	320,300.00000	0.55367	1.80610	0.01415	28.97200	3.40520E-09	-7.25090E-05	0.01238
14	12	359,840.00000	0.08112	12.32700	0.02427	-175.36000	-8.67960E-10	2.25390E-04	-0.02419
15	13	404,260.00000	0.49791	2.00840	0.02313	26.46900	4.05840E-09	-3.81910E-05	0.02070
16	14	454,170.00000	1.48750	0.67228	0.01631	56.08800	4.74300E-09	-2.58920E-05	0.00910

To save Graph data

1. Click on the “Display” icon next to Configure and then click on “Save to Bitmap”

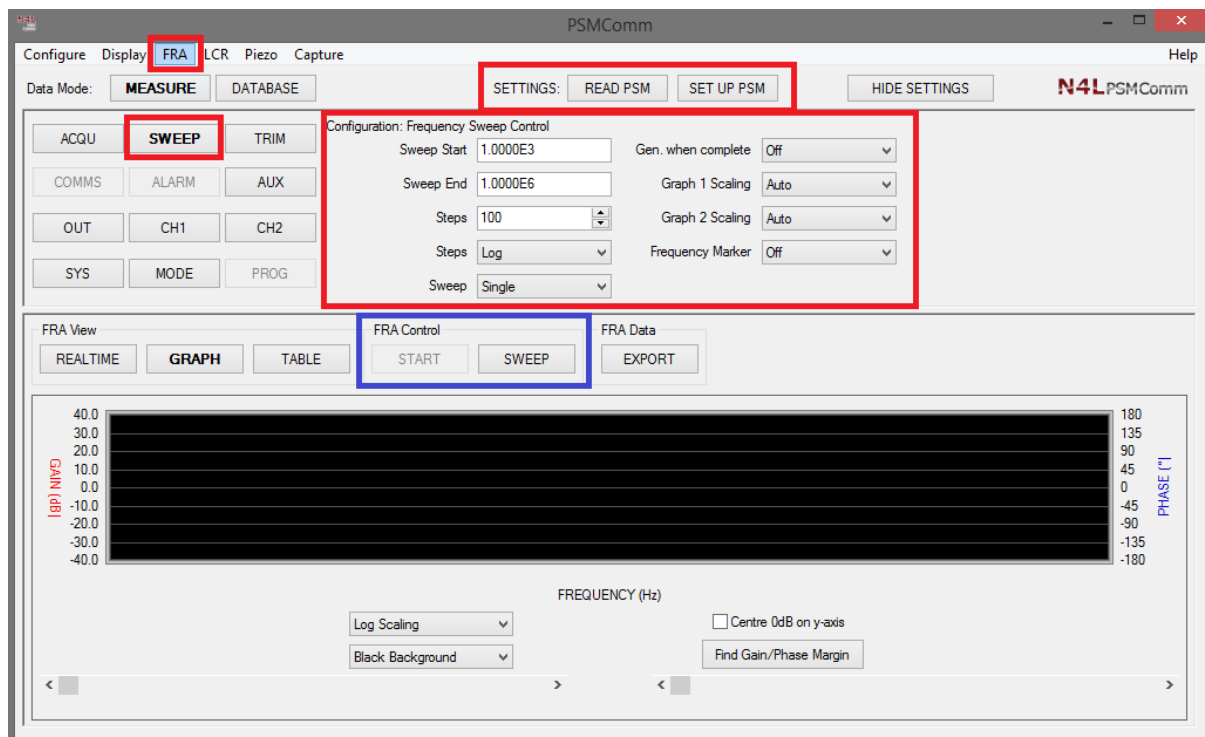


2. This will open up your documents folders, select where you wish to save this graph data display. Name your file ie: testgraph.bmp and click save
Picture will now be saved within named folder to view

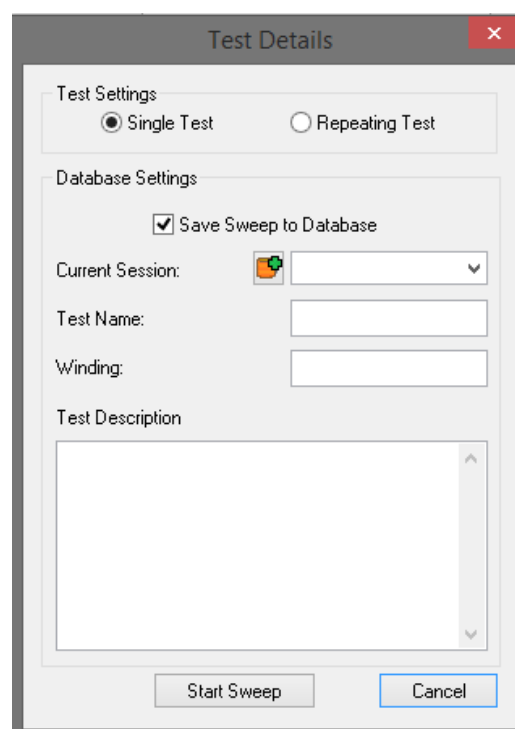


Saving & Comparing FRA sweeps within Database

1. Click on “FRA” within the measurement parameters available at the top of the PSMComm2 display
2. Set up “SWEEP” parameters either on the instrument or within the software. After any configuration change, remember to click on “READ PSM” or “SET UP PSM” to ensure any pending command has been sent to or from the instrument

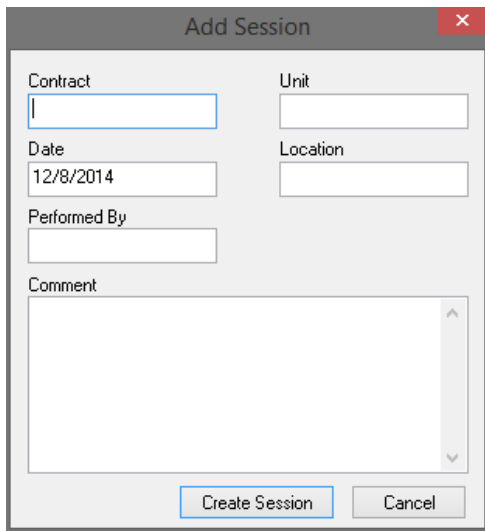


3. Click on “SWEEP” key within FRA control panel (Blue Box) this will open up a new window for inputting all the “TEST DETAILS” as below

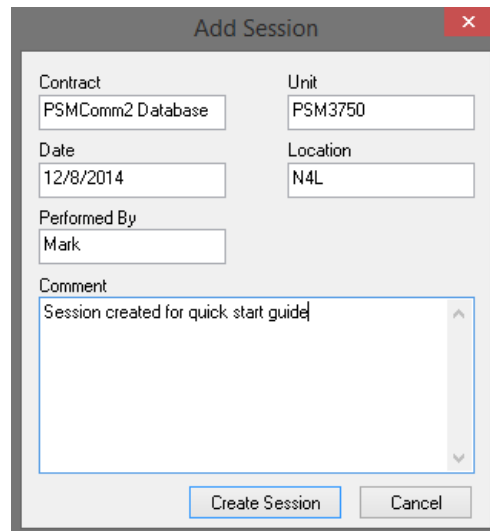


4. From the test details select if the test to be undertaken will be a single or repeating test
5. Click within “Save Sweep to Database” parameter, this will then activate all other database parameters for identification later

Current Session Icon  click here to add a session that multiple tests can be stored within. This will then store the data and be available in the future from the dropdown menu

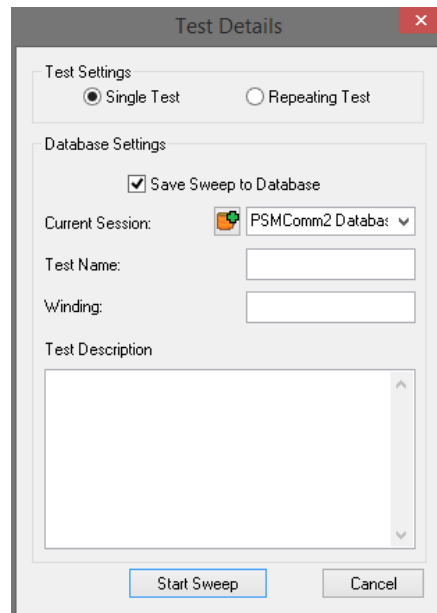


The 'Add Session' dialog box is shown with empty input fields. It contains fields for Contract, Unit, Date (12/8/2014), Location, Performed By, and a large text area for Comment. At the bottom are 'Create Session' and 'Cancel' buttons.



The 'Add Session' dialog box is shown with filled input fields. Contract is 'PSMComm2 Database', Unit is 'PSM3750', Date is '12/8/2014', Location is 'N4L', Performed By is 'Mark', and the Comment field contains 'Session created for quick start guide'. At the bottom are 'Create Session' and 'Cancel' buttons.

Upon completion of all these details click on “Create Session”



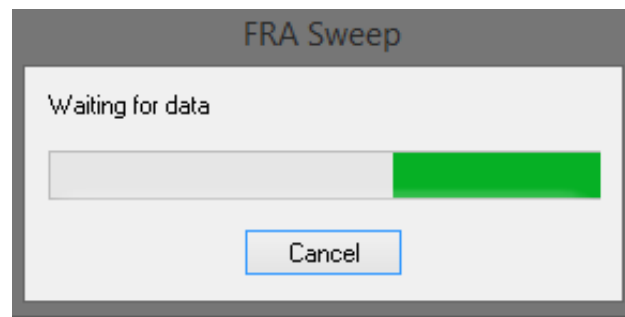
The 'Test Details' dialog box is shown. It has sections for 'Test Settings' (with 'Single Test' selected), 'Database Settings' (with 'Save Sweep to Database' checked), 'Current Session' (with a dropdown menu showing 'PSMComm2 Databa:'), 'Test Name', 'Winding', and 'Test Description' (a large text area). At the bottom are 'Start Sweep' and 'Cancel' buttons.

Test Name: Input a suitable name for your test that will be easily identifiable within your database

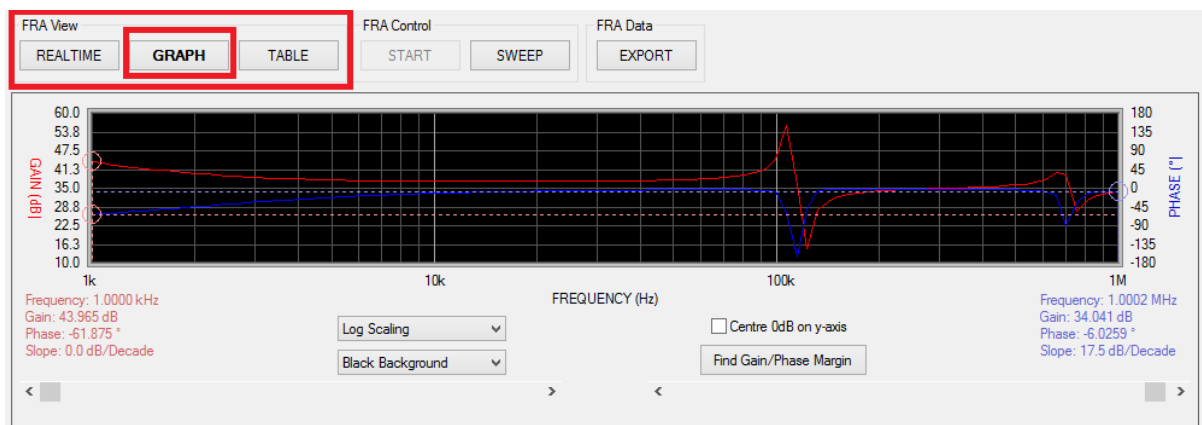
Winding: Input any suitable reference for the DUT under test

Test Description: Input up to 255 Characters that can describe anything suitable for this sweep

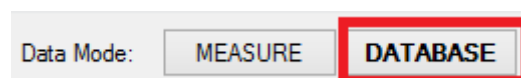
6. Starting the Sweep will present the following message upon the display



7. Upon completion of a sweep all results will be available as usual within a graphical or tabular format from the main display as below

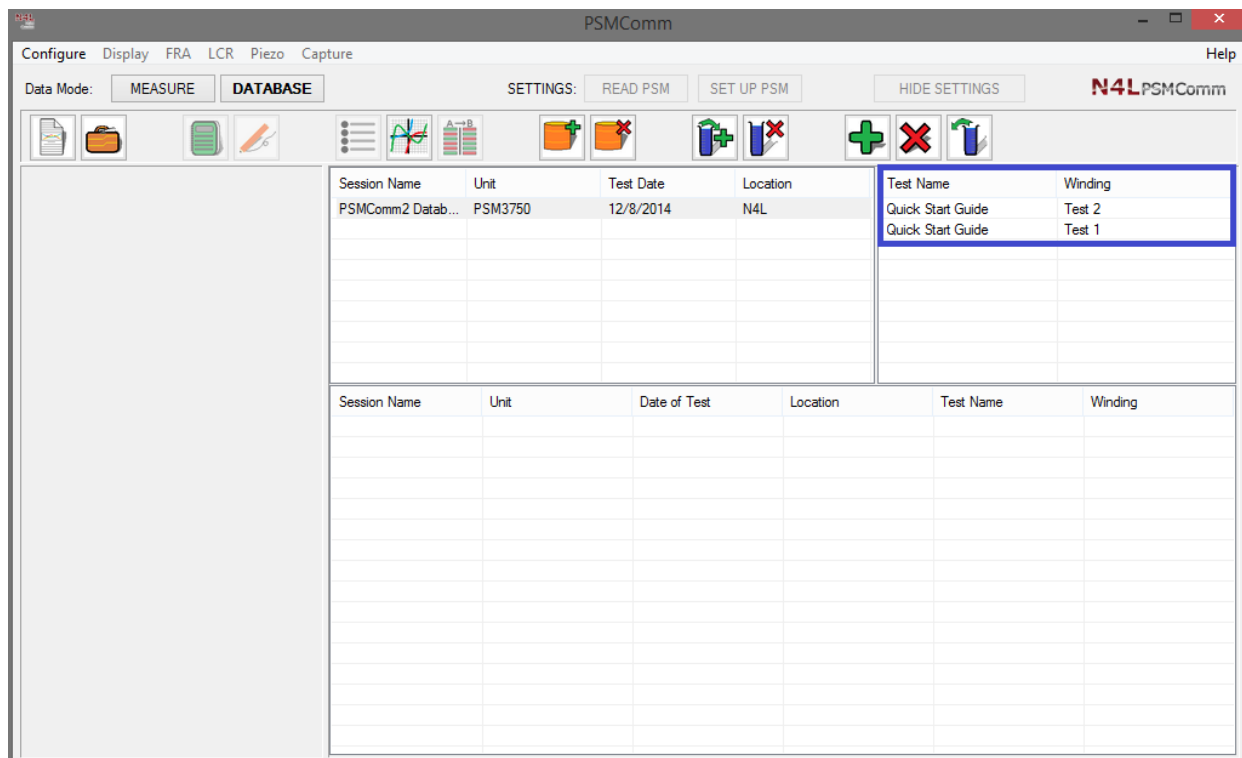


8. Click on "Database" to locate and review any saved sweep data

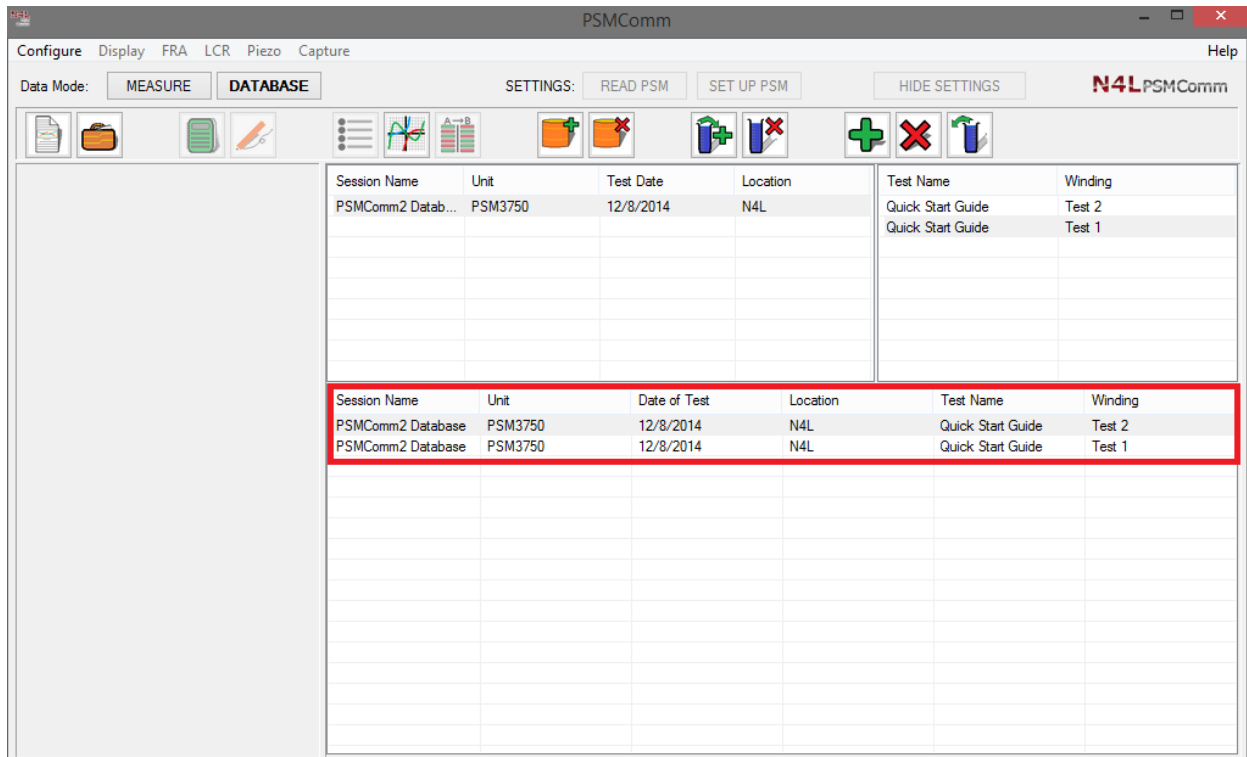


[illegible]

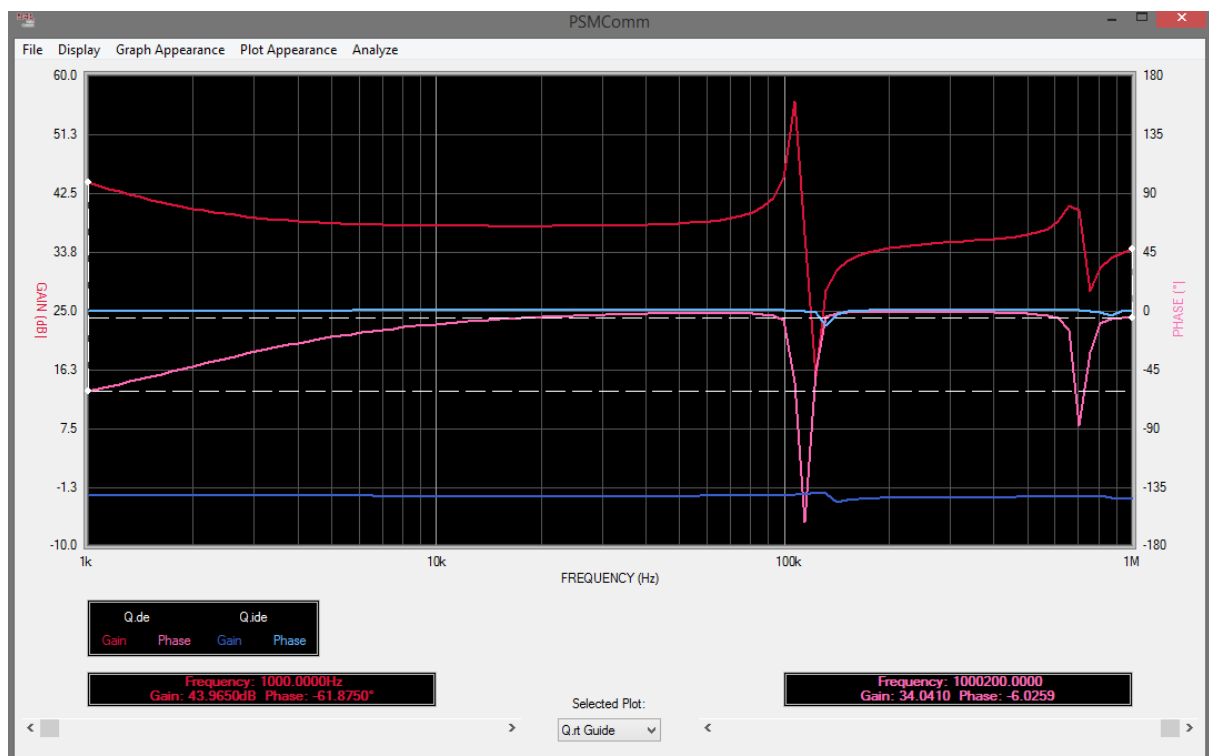
9. Click on your stored session this will then populate all available stored tests (Blue Box)



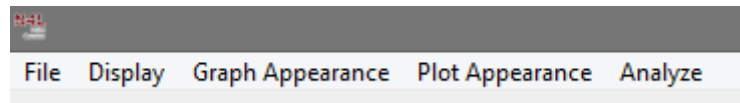
10. Click on tests to be analysed then click on the Green  Icon which will add this selected test to the lower section of the database as shown below within the Red Box Note: up to 6 tests may be selected to be viewed



11. Once all tests have been selected then click on the  Graph Selected Tests Icon. All selected tests will then be available within a graphical presentation to be viewed as below

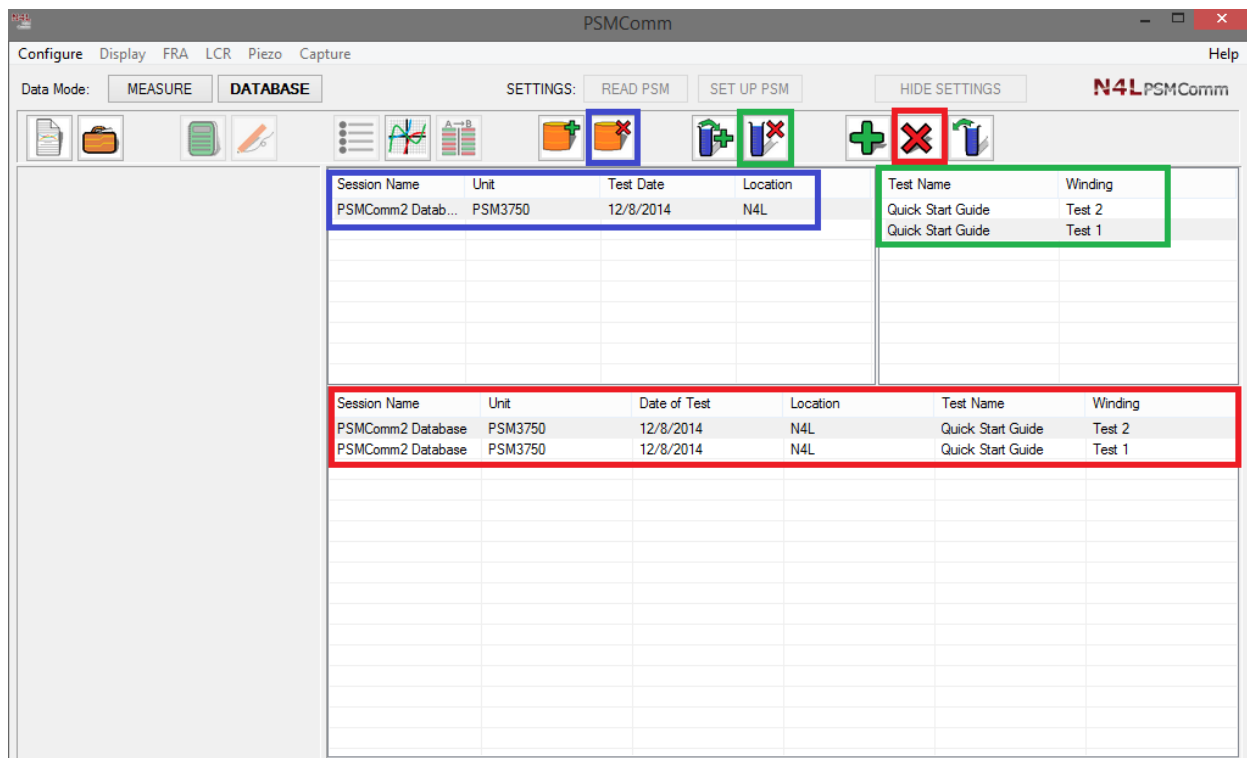


12. Each set of results can be viewed and changed from within the appearance toolbar at the top of the display



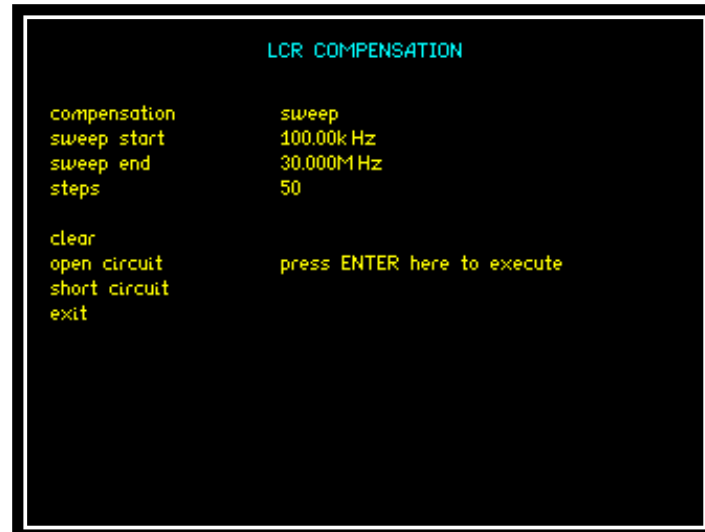
13. Deleting Tests & Sessions

From the screenshot below any test or session may be deleted by selecting the appropriate subject and then deleting via the appropriately coloured icon for each section



LCR COMPENSATION

NOTE: Remember to undergo a LCR compensation test that is configured exactly the same as the sweep test data to be conducted on the DUT (This has to be completed on the instrument)



To access LCR Compensation:

Set PSM3750 mode to LCR, press “ZERO” and the LCR Compensation screen will appear

Set compensation to either “Single” or “Sweep” and appropriate sweep parameters to correspond with DUT sweep

Scroll down to “Clear” and press ENTER

Scroll down to “Open Circuit” and press Enter (open circuit test will be conducted over the full frequency range selected)

Scroll down to “Closed Circuit” and press Enter (closed circuit test will be conducted over the full frequency range selected)

It is recommended that a solid piece of wire be used when conducting open and closed circuit tests to enable a solid connection to be made between either the Kelvin Fixture or Leads

Scroll down to “Exit” and press ENTER