

1. Introduction:

For the purpose of demonstration, the preceding tutorials have used the 'No Comp' (No Fixture Compensation) option when running tests. This option saves some time and is completely appropriate when the values of Inductance or capacitance on the test component being measured are large relative to the parasitic reactance of the fixturing system. However, where small components are being measured, the tests being used involve the measurement of small values (e.g. Leakage Inductance) or you simply wish to obtain optimum accuracy, fixture compensation option should be used.

2. Compensation from the ATi front panel

From the standard power up screen, pressing soft key 2 (LCR (BNC)) or soft key 3 (LCR(Fix)) will present the measurements screen. From this screen, press soft key 4 (Settings), then soft key 3 (Compensate) and the following screen will be shown.

<u>Compensation</u>	Short	One All	Soft-key 1
		One All	Soft-key 2
	Open		Soft-key 3
			Soft-key 4
			Soft-key 5
		OK	Soft-key 6

Pressing soft key 1 will toggle between highlighted options **One** or **All** for short circuit compensation. In this context, 'One' means one frequency as entered in the signal setting screen (from LCR mode screen; **Settings**, then **Signal** then **Enter f**) and only this frequency will be compensated. Alternatively, the 'All' option will compensate over the complete frequency range of the instrument. In most cases, it is preferable to select the 'one' option both because compensation is quicker and because compensation constants on all other frequencies that may not relate to component of interest will not be over-written. Soft key 2 provides the same options relating to open circuit compensation.

Before pressing **OK**, you must ensure that the fixture connection points are correctly prepared for compensation. In the case of Short circuit compensation, the power and sense terminals of all used nodes should be short circuited at the point of normal connection to the transformer. The short circuit bobbin provided with this evaluation system provides this function when using the M fixture. For open circuit compensation, the power and sense terminal pairs for respective nodes must be touching in order for the measurement circuits to measure at the point of transformer contact, but on this occasion, each node set should be open circuit from each other. The open circuit bobbin also with this system provides this function when using the M fixture.

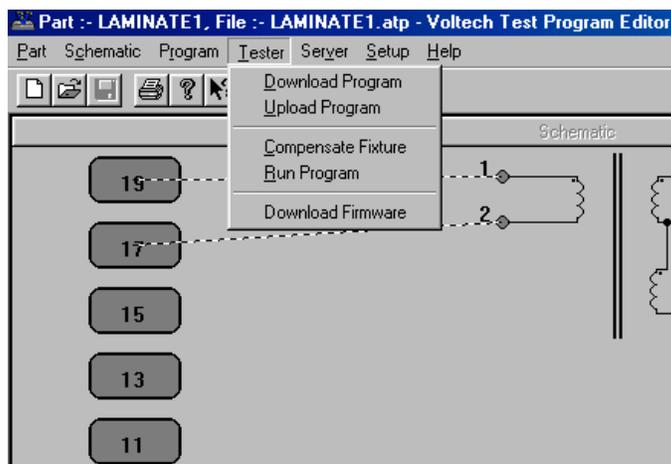
After setting up as defined above and pressing OK, the ATi will execute compensation with a progress bar moving from left to right before showing 'compensation complete'. If connections are not made correctly, the display will show 'Compensation Fail' and no compensation constants will be stored.

3. Compensation from Editor program

In order to ensure that program limits written in the Editor relate to component values with no errors due to inductance or capacitance of the fixture, fixture compensation can be executed before taking the 'nominal' readings.

To illustrate this, the M series fixture, sample transformers and a program on the floppy disk supplied with this evaluation system can be used.

Insert the 1.44MB floppy disk into your disk drive and double click the short cut icon 'Voltech AT Editor' which will be on your desk top found on your desktop. In the menu bar at the top of the screen click onto **part** and onto **open**. Select drive A:/ and click onto the program file called 'Demo Prog 1'. This will load in the demo program.



Once the program is loaded, click onto the **tester** menu (shown above) and then **download program**. After the download, the screen should say 'download successful' and the OK button should be pressed. Next click onto the menu **tester** again then **compensate fixture**, fit the short circuit bobbin as instructed in tutorial 5 (Using the M Fixture) and select **yes**. The fixture will now be compensated for stray inductance. Once finished remove the short circuit bobbin and replace with the open circuit bobbin and press **yes** for open circuit compensation. This will compensate for stray capacitance. After compensation, measured values made when programming tests will have fixture inductive and capacitive elements removed and will therefore reflect true component values.