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Electronics

3260/3255 MULTI-BIAS % MODE

(Software Version SP1_V2)

1. INTRODUCTION

This mode allows the 3260 and 3255 to test a DUT with a sequence of bias level settings and is implemented in the same way as Multi-Frequency Mode.

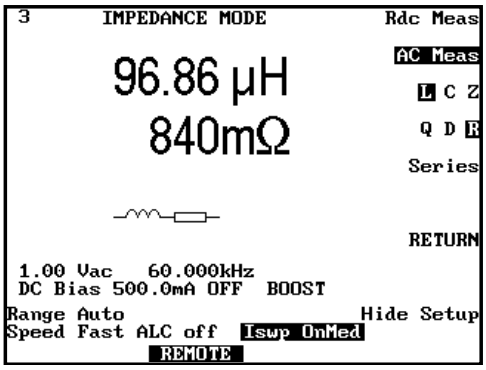
When the instrument is triggered (via front panel, rear panel, Bin Handler or GPIB) it performs a sequence of measurements with bias applied. (Bias off is equivalent to zero current). The bias is automatically turned on at the start of the sequence and turned off at the end of the sequence.

Test limits can be applied to each measurement.

The PASS/FAIL results are displayed for each test where a limit has been set. The overall PASS/FAIL result is passed to the Bin Handler output.

2. MULTI-BIAS MODE

Measurement Set Up



A new data field (Iswp) has been added to the IMPEDANCE/MEASUREMENT page.

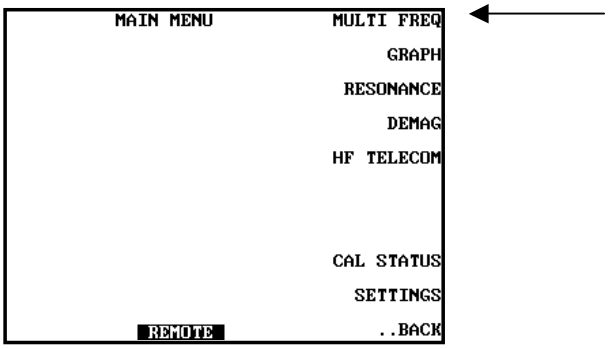
The new Iswp (Multi-Bias) field has 4 settings:-

1) Off – unit operates as standard
2) OnStd – unit operates in 'Iswp' (Multi-Bias) mode. Bias turn on and turn off speed are standard
3) OnMed– unit operates in 'Iswp' mode. Bias turn on and turn off speed are faster than standard. Speed is equivalent to software version 5.46B and 5.48B
4) OnMax– unit operates in 'Iswp' mode. Bias turn on and turn off speed are the maximum. Speed is equivalent to software version 5.42S.

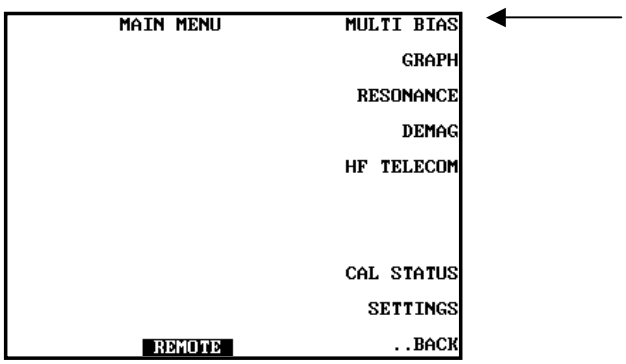
Note: OnMed and OnMax settings are only available in BOOST mode.

The rest of the settings are used when 'Iswp' mode is executed, e.g in the above example the test will be performed at 1Vac, 60kHz, Fast speed, etc. (The bias value is ignored in Multi-Bias).

When **Iswp** is set to **Off** the second menu page displays 'Multi Freq'

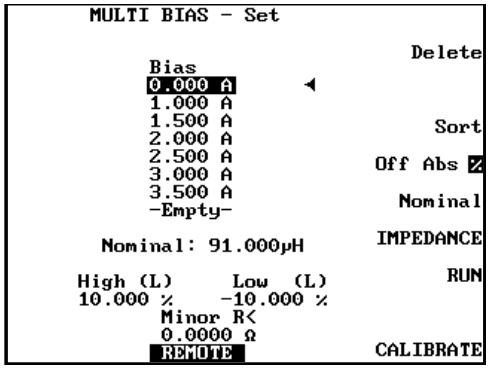


With any other **Iswp** setting the second menu page displays 'Multi Bias'



Multi-Bias Mode - Set

When 'Iswp' has been set to OnStd, OnMed or OnMax, the Multi-Frequency Mode page becomes Multi-Bias Mode as shown.



To enable this function select %.

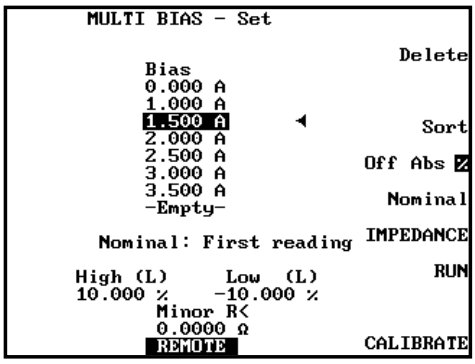
Use the UP/DOWN cursors to move between tests. This will show the test limits for that test. Use the LEFT/RIGHT cursor keys to select the various setup fields.

A PASS/FAIL test will not be performed on the MAJOR term if 'High' and 'Lo' are set to zero.

A PASS/FAIL test will not be performed on the MINOR term if 'Minor' is set to zero.

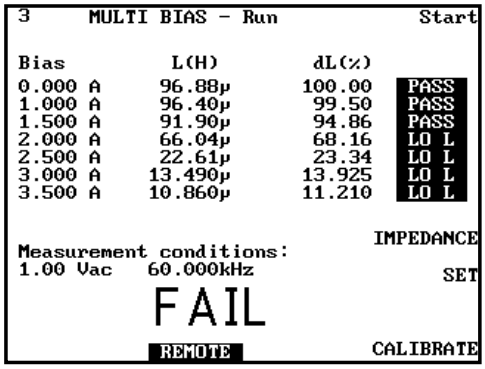
Selecting the first test in the list will show the nominal value as in the picture above.

Selecting any other test will indicate ' First reading'.



Multi-Bias Mode - Run

Select 'Run'. Use any of the trigger methods available (front panel, rear panel, GPIB or BIN Handler) to perform a test.



The PASS/FAIL output is sent to the BIN Handler.

3. GPIB CONTROL

Impedance/Measure Mode

3260

Set I-swp (Multi-Bias) mode.

:IMP:I-SWEEP A where A is OFF, ONSTD, ONMED or ONMAX

e.g. :IMP:I-SWEEP ONMAX

Use :IMP:I-SWEEP? to query the setting

0 = OFF

1 = ONSTD

2 = ONMED

3 = ONMAX

3255

:MEAS: I-SWEEP A where A is OFF, ONSTD, ONMED or ONMAX

e.g. :MEAS: I-SWEEP OFF

Use :MEAS:I-SWEEP? to query the setting

0 = OFF

1 = ONSTD

2 = ONMED

3 = ONMAX

Multi-Bias

All standard Multi-Freq commands are available e.g. :MULTI: ….. as described in the user manual with the following exceptions:-

:MULTI:BIAS

Instead of using :MULTI:FREQ X where X is the required frequency

use :MULTI:BIAS Y where Y is the required current

e.g.

:MULTI:TEST 0

:MULTI:BIAS 0.0

:MULTI:TEST 1

:MULTI:BIAS 10.0

sets ‘Test 0’ to 0A and ‘Test 1’ to 10A

:MULTI:RES? X

Use this to return the measurement results for a particular test

Eg. :MULTI:RES? 0 returns the result for the first test, :MULTI:RES? 1 returns the result for the second test.

The result format is as follows:-

1, +.96875167E-04, +.85523245E+00, +.10000000E+03

First field: 0 = FAIL, 1 = PASS

Second field: Major term

Third field: Minor term

Fourth term: % deviation