WS1050, Package parts 16 DUT Reliability

Test Procedures

Introduction:

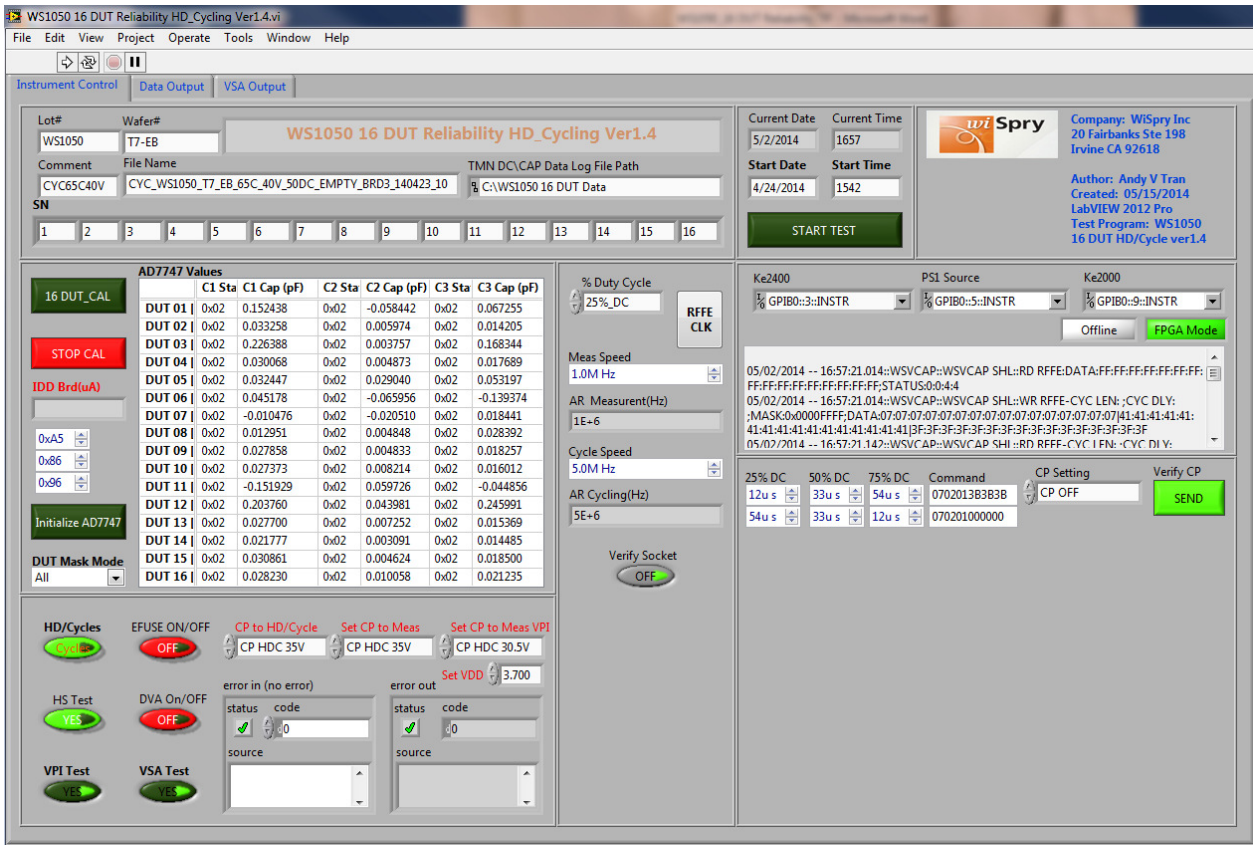
The purpose of this test procedure is for Hold Down and Cycling on package parts WS1050 from 16 DUT board, and this test procedure is using in WiSpry Lab in Irvine only.

Hardware and Software requirement:

a. Hardware:
   1. Agilent 3631A, for VDD, +3.3V, -3.3V
   2. Ke2000 for current measurement
   3. Ke2400 for VSA test
   4. PXI 1033 chassis
   5. NI PXI-7813R, FPGA Card for RFFE and I2C

b. Software:

Test program: WS1050, 16 DUT Reliability HD_Cycling Ver1.4



This test program will be found at the link below:

S:\Software_Control\Released\16 DUT Board\WS1050 16 DUT Reliability HD_Cycling Ver1.4

Set up and run Test Program:

1. Set temperatures from the oven/chamber:
   Adjust temperatures from the oven/chamber to meet the requirement (25C, 45C, 55C, 65C or 85C with no control RH)

2. Verify Socket button should be “ON” when you run repeat measurement to verify socket stable 

   Note: look up table will be different when you run repeat measurement. The look up table file name is “Looping”

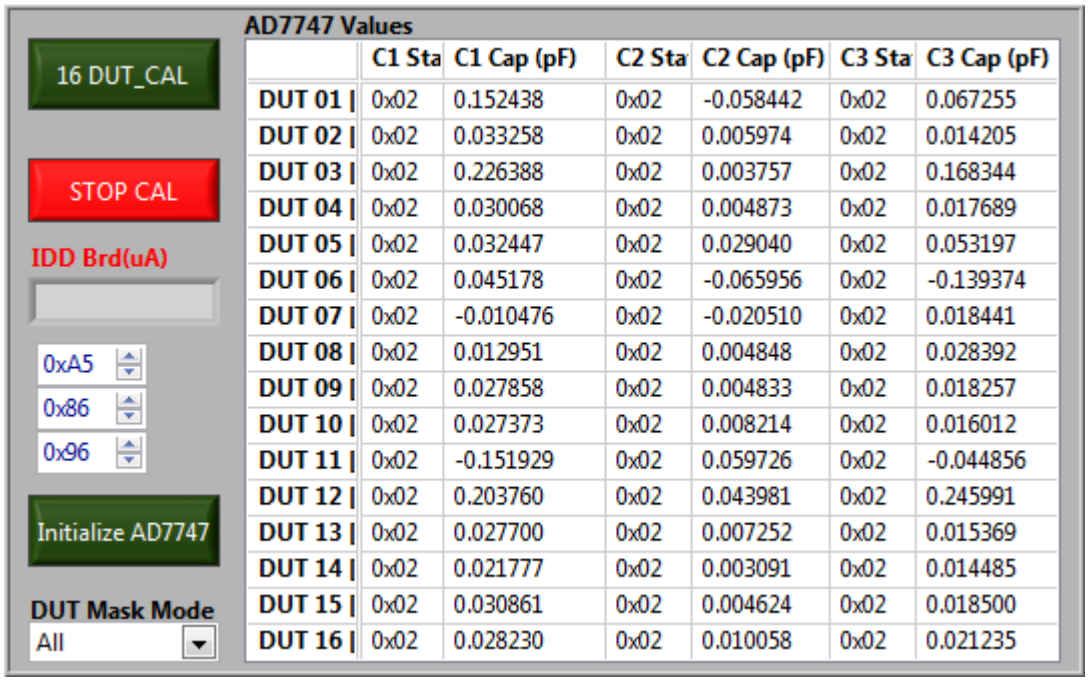
3. Verify Socket button was set “OFF” by default 

to run HD/Cycling.

4. Open the test program at the link above. Click on  this button to run the test program. **Note: the test program will ask for a look up table, the look up table will be found on the desktop under 16 Sockets Read point folder, with the file name “16 socket cycling new”**

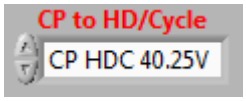
5. Sockets Calibration:
   Make sure the conditions to run the test from oven/chamber meet the requirement then click on 

button to zero out the 16 sockets, verify C1, C2 and C3 at window below are ~0 (zeroes).



	C1 Sta	C1 Cap (pF)	C2 Sta	C2 Cap (pF)	C3 Sta	C3 Cap (pF)
DUT 01 |	0x02	0.152438	0x02	-0.058442	0x02	0.067255
DUT 02 |	0x02	0.033258	0x02	0.005974	0x02	0.014205
DUT 03 |	0x02	0.226388	0x02	0.003757	0x02	0.168344
DUT 04 |	0x02	0.030068	0x02	0.004873	0x02	0.017689
DUT 05 |	0x02	0.032447	0x02	0.029040	0x02	0.053197
DUT 06 |	0x02	0.045178	0x02	-0.065956	0x02	-0.139374
DUT 07 |	0x02	-0.010476	0x02	-0.020510	0x02	0.018441
DUT 08 |	0x02	0.012951	0x02	0.004848	0x02	0.028392
DUT 09 |	0x02	0.027858	0x02	0.004833	0x02	0.018257
DUT 10 |	0x02	0.027373	0x02	0.008214	0x02	0.016012
DUT 11 |	0x02	-0.151929	0x02	0.059726	0x02	-0.044856
DUT 12 |	0x02	0.203760	0x02	0.043981	0x02	0.245991
DUT 13 |	0x02	0.027700	0x02	0.007252	0x02	0.015369
DUT 14 |	0x02	0.021777	0x02	0.003091	0x02	0.014485
DUT 15 |	0x02	0.030861	0x02	0.004624	0x02	0.018500
DUT 16 |	0x02	0.028230	0x02	0.010058	0x02	0.021235

6. Click on 

button to stop the calibration
7. Set the CP voltage to HD/Cycle by selecting CP voltage was setting on this box


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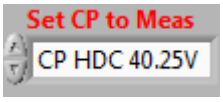
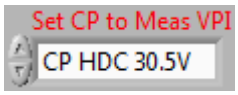
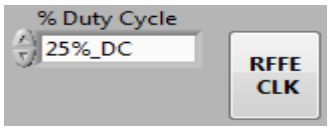
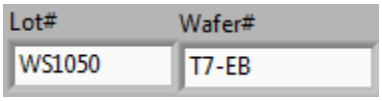
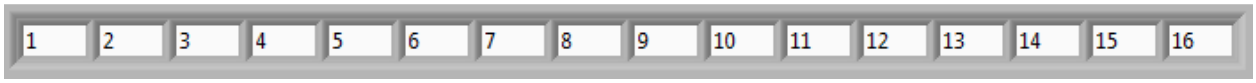
8. Set the CP voltage to measure capacitance by selecting CP voltage was setting on this box 

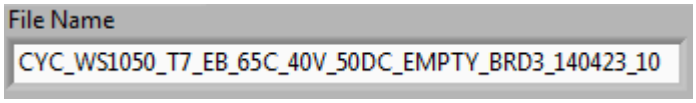
9. Set the CP voltage to measure VPI by selecting CP voltage setting on this box


10. Verify VDD = 3.7V on this box 

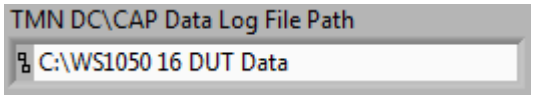
11. Set percent duty cycle by selecting percent duty cycle was setting on this box


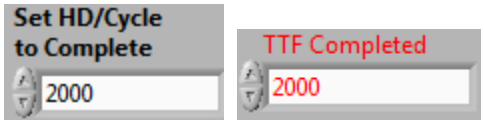
12. Enter Lot #, Wafer # into this box 

13. Enter serial number of 16 DUT


14. File name:


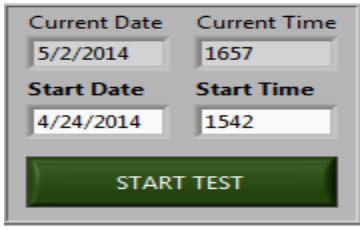
Cyc_Lot #_Wafer #_Design_Temperature_Voltage Cycle_Duty Cycle_Board_Date_Run #

15. Directory to save the test data: this is by default


16. Set the number of cycles to complete: Enter the number of cycles you want to run into these boxes. 

Note: These two numbers should be the same for cycling, and not the same for HD.

17. You have an option to start the test immediately by clicking on start test button or you can select date/time to start running the test program.

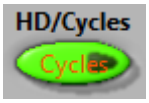


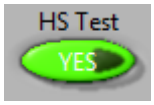
18. You have an option to run HD/Cycle with E-Fuse ON/OFF by clicking on this button 

19. You have an option to run HD/Cycle with DVA ON/OFF by clicking on this button 

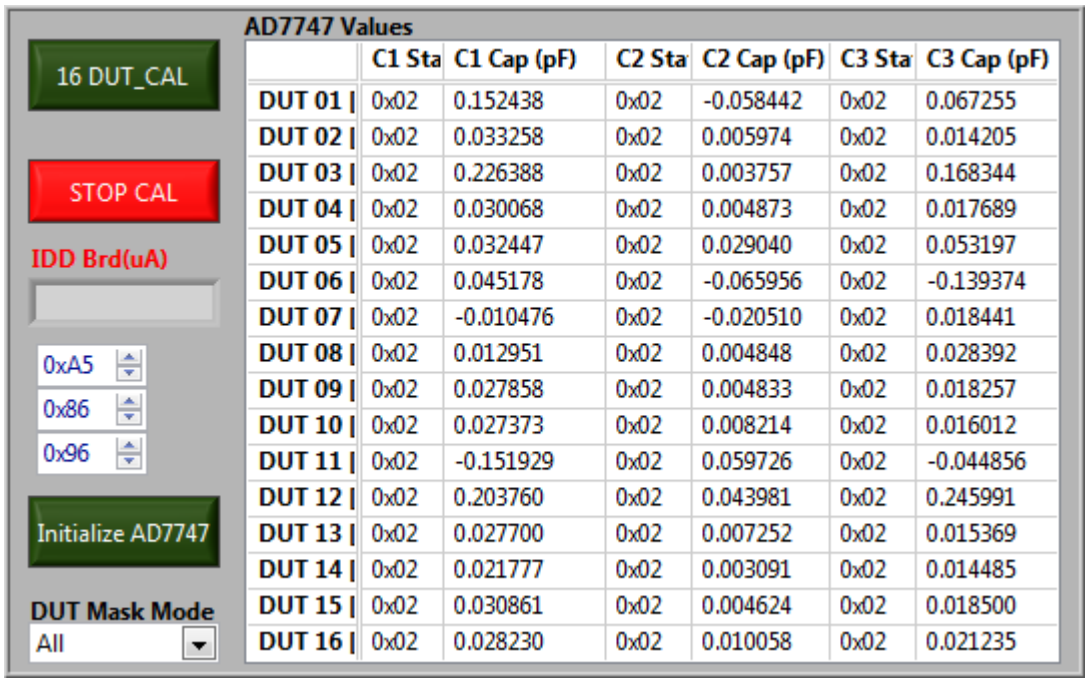
20. You also have an option to measure VPI, VSA by selecting Yes/No on these two buttons 

, these two buttons were set “Yes” by default.

21. This button was set by default “Cycles” 

22. Handshake check was set “YES” by default 

23. Load parts into 16 sockets and verify Cmin at the window below. Cmin is ~1.2pF for all 3 banks, C1, C2 and C3.



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DUT 16 |	0x02	0.028230	0x02	0.010058	0x02	0.021235