MIIPS®2.0 Software Notes

How to Generate Two or More Pulses using MICS technique

Revision 1.2

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1401 East Lansing Dr., Suite 112
East Lansing, MI 48823, USA
+1-517-580-4075 (ph)
+1-517-579-8571 (fax)
info@bsifemto.com
www.biophotonicsolutions.com
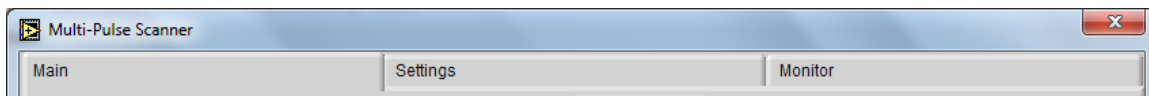
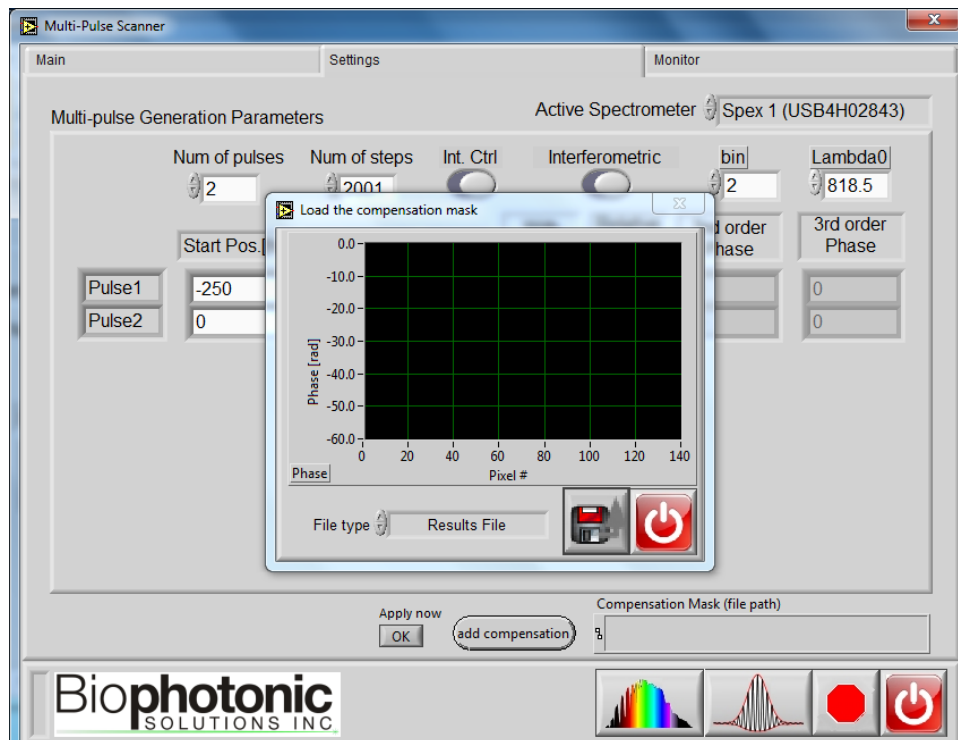# Step-by-Step Instructions

1. Click "Applications" from the menu bar and choose "Multi-Pulse Generator" to enter "Multi-Pulse Scanner" UI.
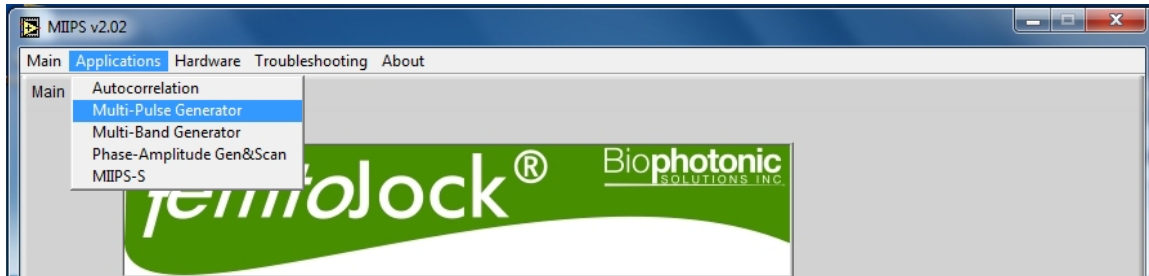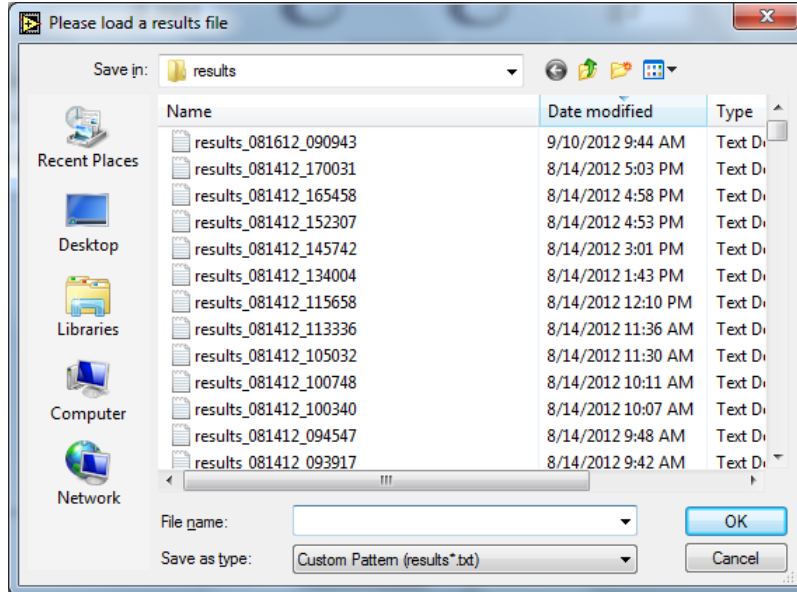

2. Once starting the "Multi-Pulse Scanner" UI, choose "Settings" from the panel selector located at the top of the UI.


3. If you would like to generate a pair of TL pulse replica, a compensation mask needs to be added by clicking the "add compensation" button at the bottom of the "Settings" panel. A "Load the Compensation Mask" UI window will pop out and ask to load the best compensation mask.

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4. Choose the desired "Results File" or "Compensation Mask" from the latest MIIPS measurements.

5. The compensation mask will show in the graph if the file loads successfully. Click ⏻ button in "Load the Compensation Mask" UI to return to "Multi-Pulse Scanner" UI
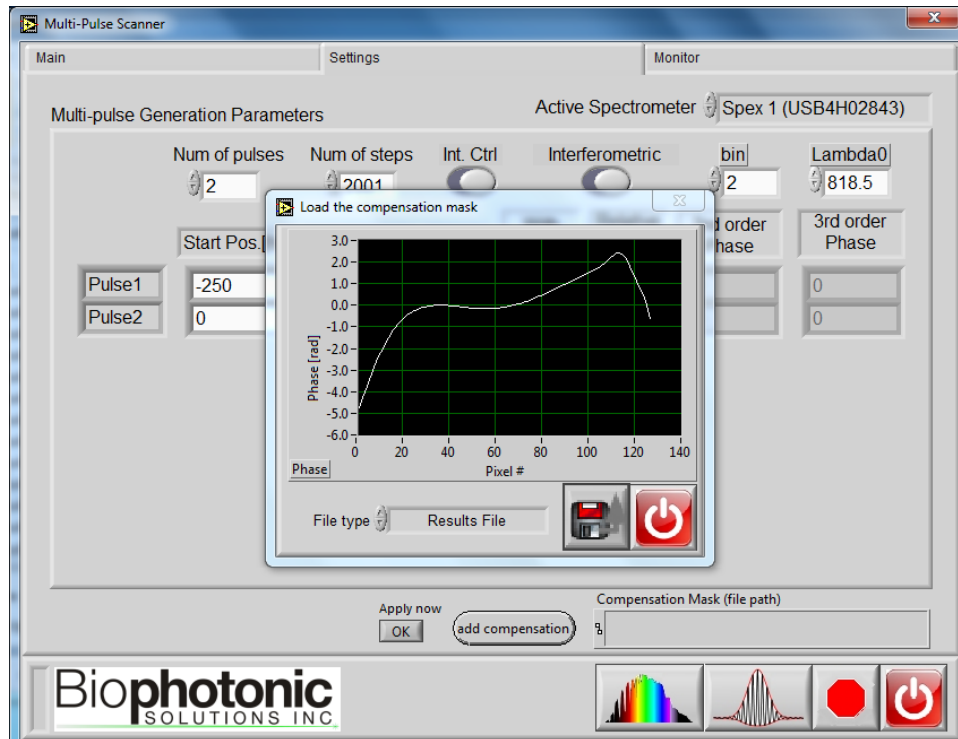

6. Now it is time to adjust the parameters for individual pulses. If one only needs to generate two or more pulses at certain positions in time, without scanning, users can simply

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input the time delay in "Start Pos. [fs]" column and then click "Apply now" button on the left of at the bottom of "Settings" tab.

*If more than two pulses are needed, change the "Num of pulses" accordingly. The maximum number of pulses allowed by software is 8, however, the maximum number of pulses can be actually delivered varies with specific systems.

**Users can further manipulate the pulses by a) turn on/off the compensation mask for each pulse ("With Comp?" column); b) adjust the relative intensity of each pulse ("Relative Intensity" column); c) adjust polarization of each pulse when "Int. Ctrl" switch to "Pol. Ctrl" ("Pol. Ctrl" column); d) add 2nd and/or 3rd order spectral phase to each pulse ("2nd order phase" and "3rd order phase" columns)
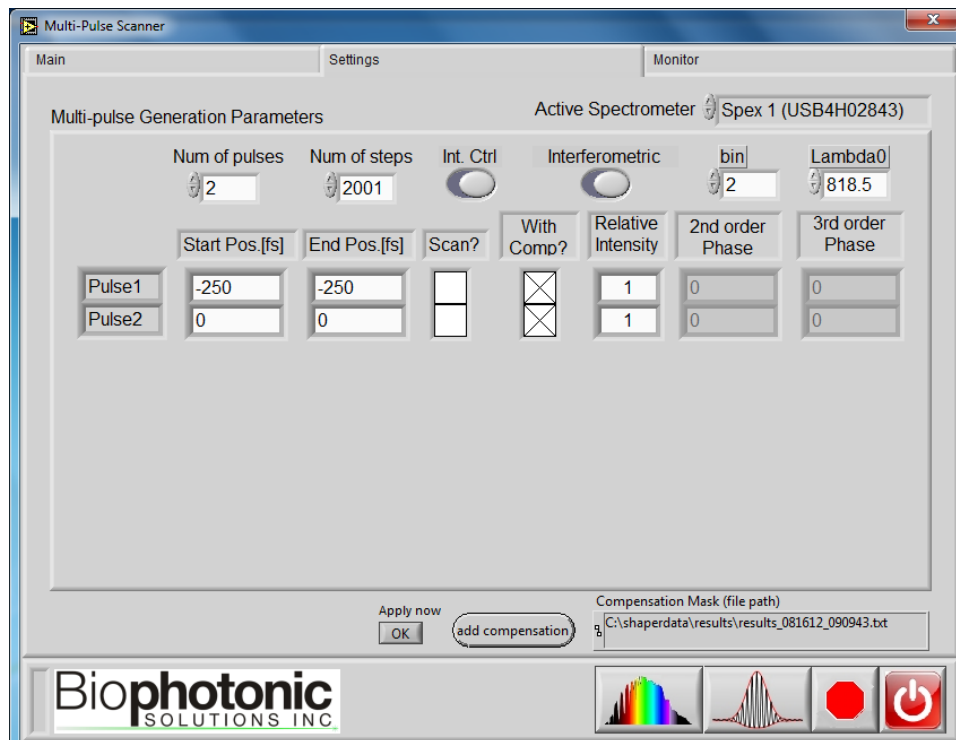
7. If you would like to scan the temporal position(s) of one or more pulse(s), then check the corresponding box in "Scan?" column and set the start position and end position of the scan, accordingly. Click [icon] button to start the scan. The "Apply now" button is disabled when any box in "Scan?" column is checked.

For more information about the MICS technique, please refer to Pestov *et al.*, "Multiple Independent Comb Shaping (MICS): Phase-only generation of optical pulse sequences", Optics Express 17, 14351 (2009); http://www.opticsinfobase.org/oe/abstract.cfm?uri=oe-17-16-14351