

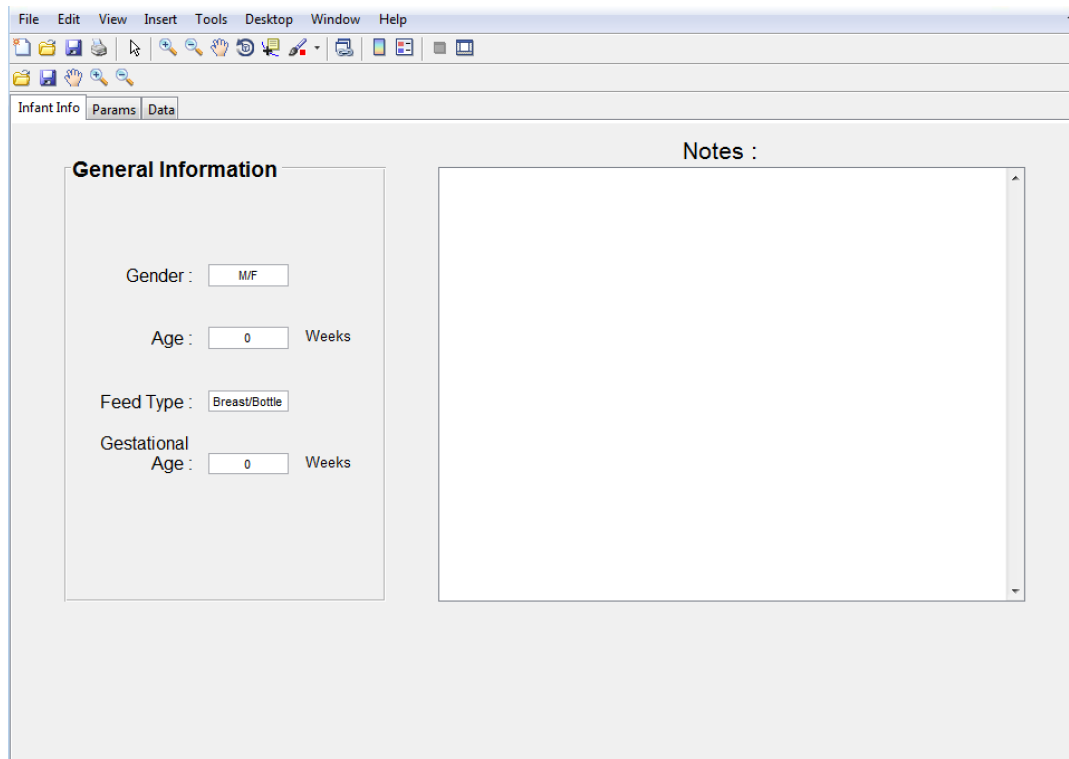
## **Suck Detection Manual**

The Suck Detection Program is designed to perform robust and detailed analysis of a data file generated by the Neonur system while being easy to use. Although you may save the data that is generated in the form of an Excel file, the program displays all relevant information completely within the interface of the program.

### **The Interface**

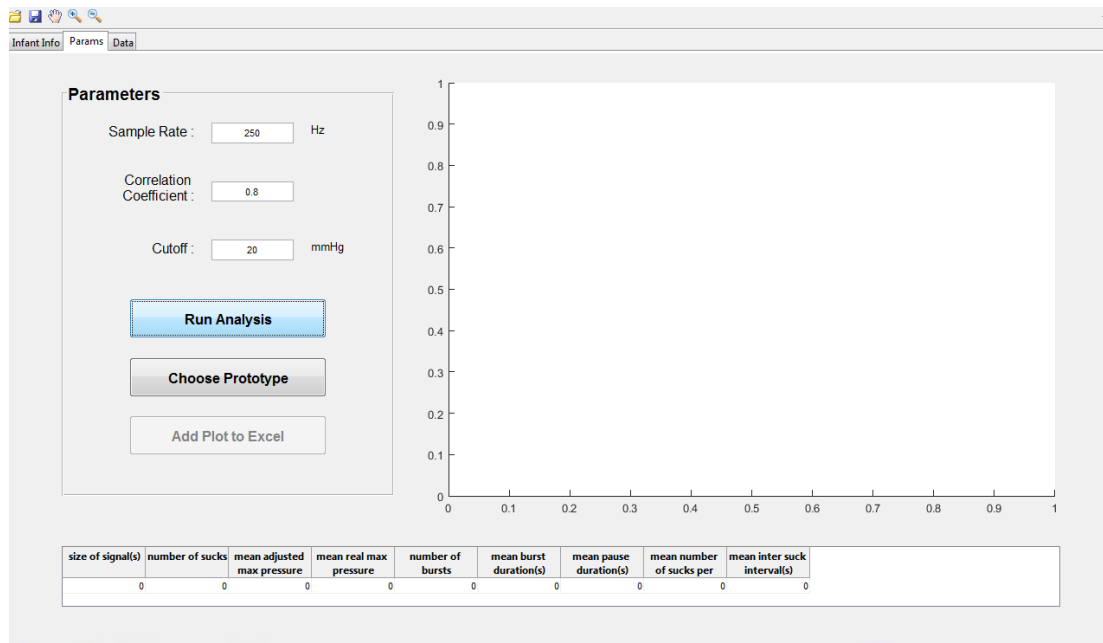
The program's interface consists of three tabs:

**Infant Info:** Contains fields for general information about the infant as well as a text box for any notes that the user wishes to document. Information recorded in this tab is not used in the program's analysis, but is recorded in the output Excel files.



The screenshot displays the 'Infant Info' tab of the Suck Detection Program. The window has a standard menu bar (File, Edit, View, Insert, Tools, Desktop, Window, Help) and a toolbar with various icons. Below the menu bar, there are three tabs: 'Infant Info', 'Params', and 'Data'. The 'Infant Info' tab is active, showing a 'General Information' section on the left and a 'Notes' text area on the right. The 'General Information' section contains four input fields: 'Gender' with a dropdown menu showing 'M/F', 'Age' with a text box containing '0' and the unit 'Weeks', 'Feed Type' with a dropdown menu showing 'Breast/Bottle', and 'Gestational Age' with a text box containing '0' and the unit 'Weeks'. The 'Notes' section is a large, empty text box with a vertical scrollbar on the right side.

**Params:** Contains a Parameters box for the sample rate, correlation coefficient, and cutoff pressure, as well as the “Run Analysis”, “Choose Prototype”, and “Add Plot to Excel” buttons. This tab also has a graph for the signal and a single row for summary data after analysis.



**Data:** Displays the full analysis for each suck and burst detected after the program is executed.

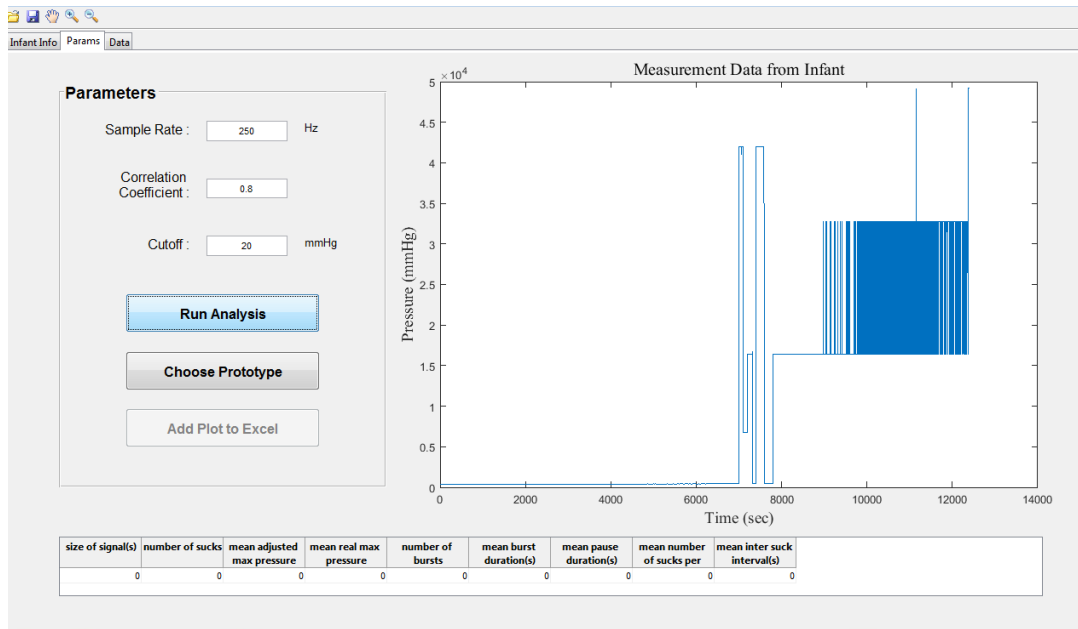
Suck#	T.O.O	Duration	Adjusted Pmax	Real Pmax	T of Pmax	I.S.I	A.U.C
0	0	0	0	0	0	0	0

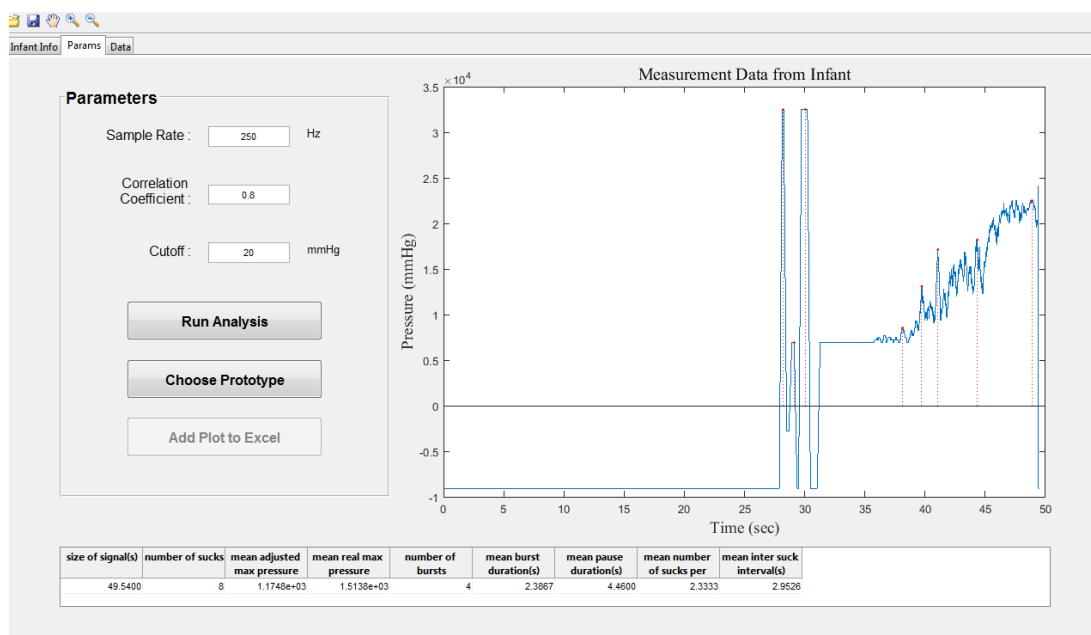
Burst#	# of Sucks	Duration	I.B.I
0	0	0	0

## Using the Program

To start, click the open folder icon in the top left corner of the toolbar and select the desired data file. This data file may be anywhere on the user's computer. Once the file has been selected, the empty graph in the Params tab will display the signal of the data chosen.



At this point, the user may wish to change the preset parameters if desired. Additionally, the user may wish to choose a different prototype other than the default if necessary. To run the analysis, press the “Run Analysis” button. The button will then change to “Running...” Once the analysis is complete, the graph will change to reflect the signal processing, the calculated baseline, and the detected sucks in the form of dotted red lines. The data row at the bottom will also fill with the summary data.



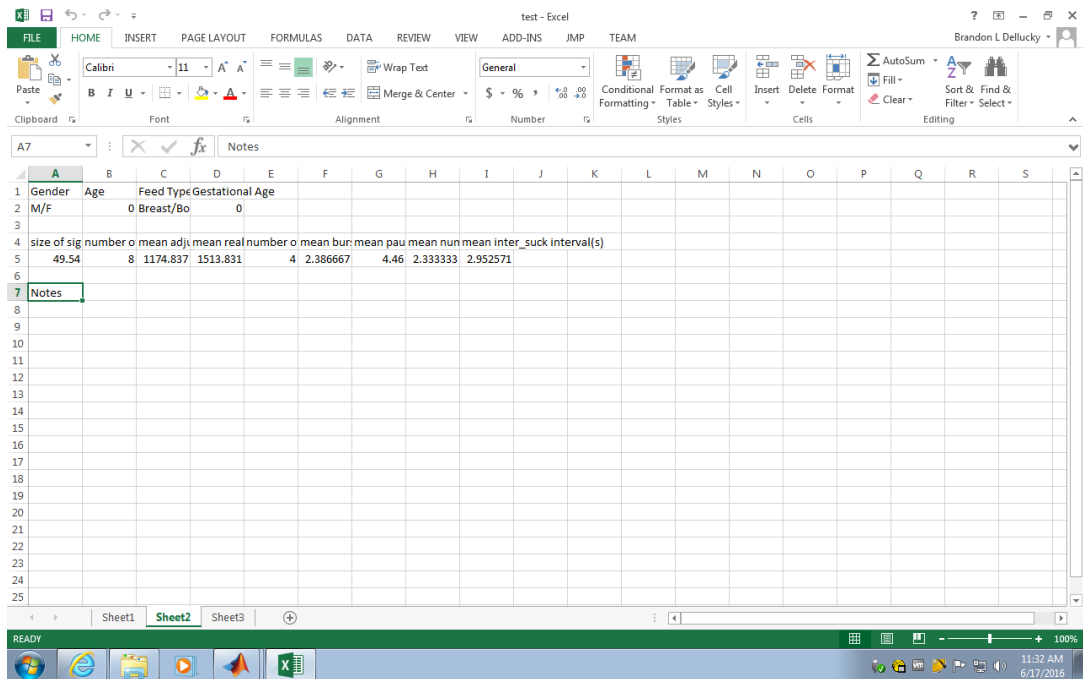
The Data tab will also fill with the full analysis of each individual suck and burst detected.

Data							
Suck#	T.O.O	Duration	Adjusted Pmax	Real Pmax	T of Pmax	I.S.I	A.U.C
1	27.9280	0.5880	3.5406e+04	3.2482e+04	28.2080	0.9240	2.6742e+06
2	28.5160	0.9800	1.5997e+04	6.9301e+03	29.1320	0.9320	-8.6119e+03
3	29.4960	1.1680	4.1565e+04	3.2499e+04	30.0640	11	5.0421e+06
4	40.8040	0.5040	7.7891e+03	1.7130e+04	41.0640	0	1.6503e+06
5	43.9640	0.8160	5.9090e+03	1.8204e+04	44.3400	-1	3.0820e+06
Burst#	# of Sucks		Duration		I.B.I		
1	3		2.7360		10.1400		
2	1		0.5040		2.6560		
3	1		0.8160		-1		

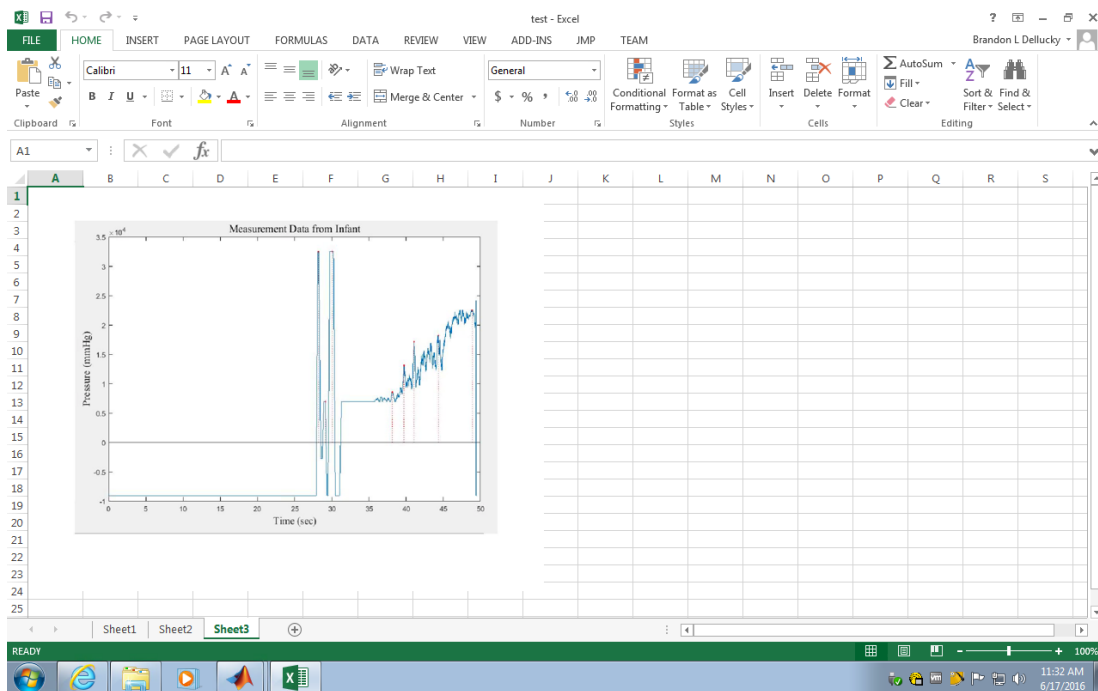
## Saving the Results

At this point, the user may wish to save this analysis in the form of an Excel file. To do so, simply click the save icon in the interface's toolbar. The Excel file saved will have two tabs, the first for the data of each individual detected suck and the second for the summary data.

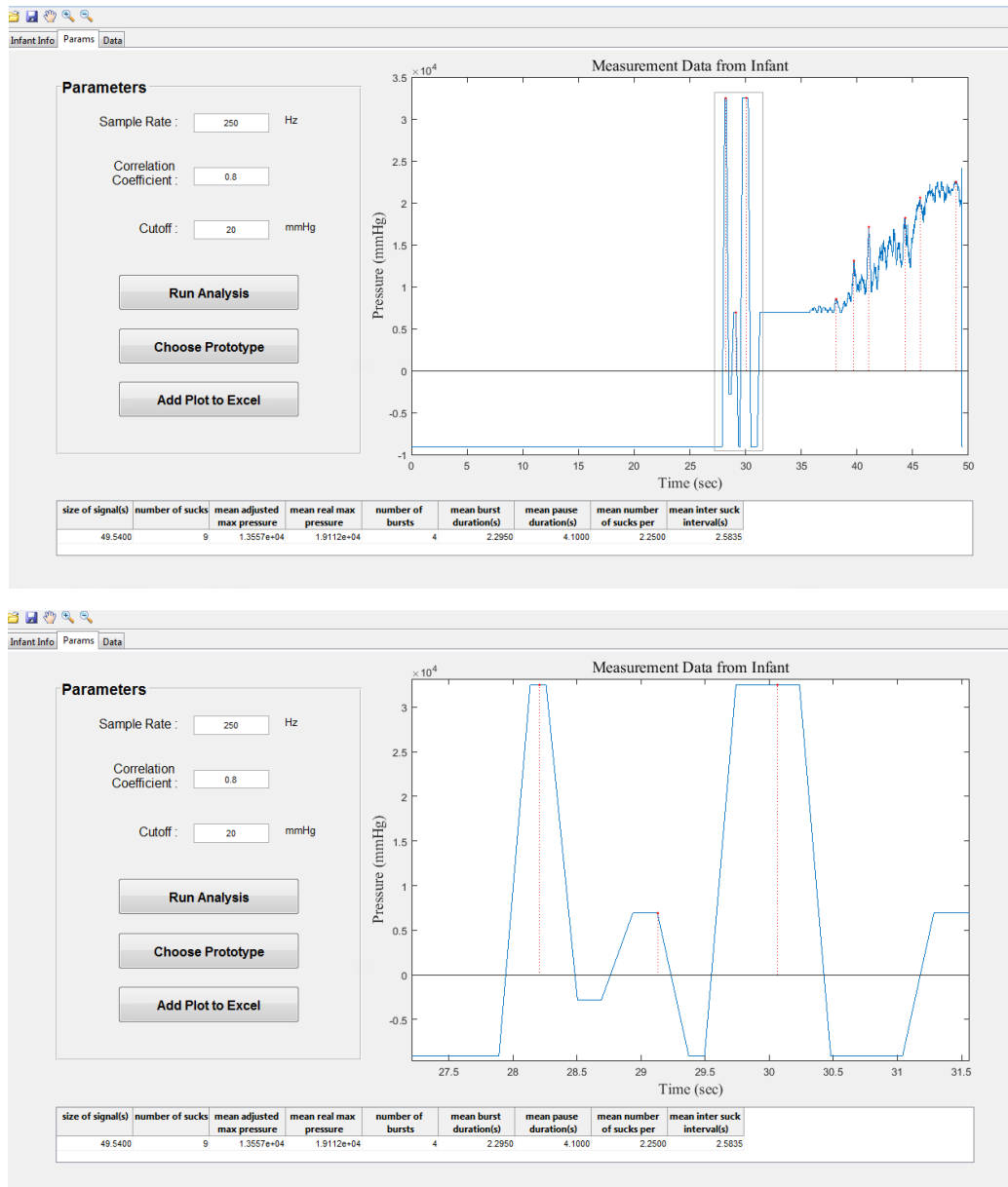
Suck #	T.O.O	Duration	Adjusted Pmax	Real Pmax	T of Pmax	I.S.I	A.U.C
1	27.82	0.86	41548.21	32481.82	28.208	0.924	2343636
2	28.74	0.56	11271.64	6930.068	29.132	0.932	536543.6
3	29.48	1.04	41565.05	32498.61	30.064	8.072	5332260
4	37.84	0.74	1611.541	8535.15	38.136	1.588	1411940
5	39.48	0.56	4834.623	13101.18	39.724	1.34	1516423
6	40.76	0.68	7789.115	17130.04	41.064	3.276	2092369
7	43.96	0.86	5908.984	18204.4	44.34	4.536	3219505
8	48.36	1.04	2954.492	22501.84	48.876	-1	5596940



The user may also add the analyzed data plot to a third sheet by clicking the “Add Plot to Excel” button in the Params tab. After clicking, the plot will appear in this manner:



Additionally, one may wish to zoom in on a piece of the graph and save the zoomed graph in the Excel file. To zoom, click the zoom button on the toolbar and select the region you wish to zoom.



To save this new graph to your existing Excel file, click the “Add Plot to Excel” button. The program will prompt you to overwrite your existing file. Confirm the overwrite and the new graph will appear in Sheet 4. You can save as many altered graphs as you like with each one saving in a new sheet.