

Test Plan

Team #9 - Wei Yan, Eyal Eynis, Philip Velichko and Hung Pham

Test Author: Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham						
	Test Case Name:	Waveform Generator Test	Test ID #:	000		
	Description:	This test case is designed to test each individual waveform's amplitude and frequency	Type:	<input type="checkbox"/> white box <input checked="" type="checkbox"/> <u>black box</u> <input type="checkbox"/> _____		
Tester Information						
	Name of Tester:	Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham	Date:	11/30/2021		
	HW/SW Version:	1.0	Time:	3pm		
	Setup:	Arduino nano with passive low pass RC filters and op amps for signal amplification.				
T E S T	INPUTS	EXPECTED OUTPUTS	P A S S	F A I L	N / A	Comments
1	Rotary encoder set to min frequency 100Hz and max frequency 25kHz. Potentiometer in op amps set to get min amplitude of 0V and max amplitude of 9V.	Square waveform should have a min frequency of 100Hz and a max frequency of 25kHz. Square waveform should have a min amplitude of 0V and a max amplitude of 9V.				
2	Rotary encoder set to min frequency 100Hz and max frequency 25kHz. Potentiometer in op amps set to get min amplitude of and max amplitude of 9V.	Triangle waveform should have a min frequency of 100Hz and a max frequency of 25kHz. Triangle waveform should have a min amplitude of 0V and a max amplitude of 9V.				
3	Rotary encoder set to min frequency 100Hz and max frequency 25kHz. Potentiometer in op amps set to get min amplitude of 0V and max amplitude of 9V.	Sine waveform should have a min frequency of 100Hz and a max frequency of 25kHz. Sine waveform should have a min amplitude of 0V and a max amplitude of 9V.				

Test Case 1

Test Author: Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham						
	Test Case Name:	Square Waveform			Test ID #:	001
	Description:	<i>This test is testing the ability of the signal generator to produce a Square waveform anywhere in the range of 100Hz to 25kHz. For amplitude modification, potentiometers in the op amp gain stage will be used.</i>			Type:	<input type="checkbox"/> white box <input checked="" type="checkbox"/> black box <input type="checkbox"/> _____
Tester Information						
	Name of Tester:	Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham			Date:	11/30/21
	HW/SW Version:	1.0			Time:	6pm
	Setup:	Arduino nano with oscilloscope and non inverting amplifier				
S T E P	Action	Expected Result	P A S S	F A I L	N / A	Comments
1	Turn on the arduino nano (connect 5V USB supply).	The LED indicator on Arduino Nano should turn on.				
2	Connect an oscilloscope to the Square waveform port.	Square waveform should appear on the oscilloscope screen.				
3	Rotate the knob on the rotary encoder to the lowest setting.	Frequency of the Square waveform should be set at 100Hz.				
4	Rotate the knob on the rotary encoder to the highest setting.	Frequency of the Square waveform should be set at 25kHz.				
5	Rotate potentiometer on the op amp gain stage to lowest setting.	Amplitude of the Square waveform should be set to 0V.				
6	Rotate potentiometer on the op amp gain stage to the highest setting.	Amplitude of the Square waveform should be set to 9V.				
Overall test result:						

Test Case 2

Test Author: Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham						
	Test Case Name:	Triangle Waveform	Test ID #: 002			
	Description:	<i>This test is testing the ability of the signal generator to produce a triangle waveform anywhere in the range of 100Hz to 25kHz. For amplitude modification, potentiometers in the op amp gain stage will be used.</i>			Type:	<input type="checkbox"/> white box <input checked="" type="checkbox"/> black box <input type="checkbox"/> _____
Tester Information						
	Name of Tester:	Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham			Date:	11/30/21
	HW/SW Version:	1.0			Time:	6pm
	Setup:	Arduino nano with passive RC low pass filter, non inverting amplifier, and oscilloscope.				
S T E P	Action	Expected Result	P A S S	F A I L	N / A	Comments
1	Turn on the arduino nano (connect 5V USB supply).	The LED indicator on Arduino Nano should turn on.				
2	Connect an oscilloscope to the triangle waveform port.	Triangle waveform should appear on the oscilloscope screen.				
3	Rotate the knob on the rotary encoder to the lowest setting.	Frequency of the triangle waveform should be set at 100Hz.				
4	Rotate the knob on the rotary encoder to the highest setting.	Frequency of the triangle waveform should be set at 25kHz.				
5	Rotate potentiometer on the op amp gain stage to lowest setting.	Amplitude of the triangle waveform should be set to 0V.				
6	Rotate potentiometer on the op amp gain stage to the highest setting.	Amplitude of the triangle waveform should be set to 9V.				
Overall test result:						

Test Case 3

Test Author: Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham						
	Test Case Name:	Sine Waveform	Test ID #:		003	
	Description:	<i>This test is testing the ability of the signal generator to produce a sine waveform anywhere in the range of 100Hz to 25kHz. For amplitude modification, potentiometers in the op amp gain stage will be used.</i>	Type:		<input type="checkbox"/> white box <input checked="" type="checkbox"/> black box <input type="checkbox"/> _____	
Tester Information						
	Name of Tester:	Wei Yan, Eyal Eynis, Phillip Velichko, Hung Pham	Date:		11/30/21	
	HW/SW Version:	1.0	Time:		6pm	
	Setup:	Arduino nano with passive RC low pass filter, non inverting amplifier, and oscilloscope.				
S T E P	Action	Expected Result	P A S S	F A I L	N / A	Comments
1	Turn on the arduino nano (connect 5V USB supply).	The LED indicator on Arduino Nano should turn on.				
2	Connect an oscilloscope to the triangle waveform port.	The sine waveform should appear on the oscilloscope screen.				
3	Rotate the knob on the rotary encoder to the lowest setting.	Frequency of the sine waveform should be set at 100Hz.				
4	Rotate the knob on the rotary encoder to the highest setting.	Frequency of the sine waveform should be set at 25kHz.				
5	Rotate potentiometer on the op amp gain stage to lowest setting.	Amplitude of the sine waveform should be set to 0V.				
6	Rotate potentiometer on the op amp gain stage to the highest setting.	Amplitude of the sine waveform should be set to 9V.				
	Overall test result:					

Note: These tests haven't been conducted because we haven't soldered components in our pcb. We will be doing this Thursday 12/2/21 after class.