

Please complete Section One as you complete each activity and comment on what was easy or difficult.

Please complete Section Two after you have completed the entire activity.

Section One:

Comment on what was easy or difficult about creating the waveforms below.

1. Set a 500KHz sine wave with 0.5 Volt amplitude, 0 Volt offset.

Easy: 4 (100%) setting amp

Difficult: 1 (25%) unsure of steps
2 (50%) adjusting frequency

2. Set a 1 KHz square wave with a 2 Volt amplitude, 80% duty cycle, 0 Volt offset.

Easy: 4 (100%) worked great, offset, amp

Difficult: 1 (25%) unstable signal at lower frequency
1 (25%) toggle switch unstable
1 (25%) finding correct frequency required us to power cycle the unit.

3. Set a 10 Hz 0-3 Volt triangle wave. (1.5 Volt amplitude, 1.5 Volt offset.)

Easy: 4 (100%) wave/amp

Difficult: 0

4. The final box (without any knobs) will be about the same weight as this box. The box is:

(a) just the right weight (b) too heavy

4 (100%)

What would be the preferred weight ? _____

5. The final box (without any knobs) will be about half the current size. The size of the final box is:

(a) just the right size (b) too large

3 (75%)

1 (25%)

What would be the preferred size?

1 (25%) 50-70% smaller

1 (25%) durable knobs so it won't be damaged when transporting

6. The box's ease of use was: (circle one)

Excellent Very Good Good Fair Poor Very Poor

1 (25%)

3 (75%)

7. Without the knobs and with all controls on the PC, it will take some menu levels to set signal characteristics (amplitude, frequency, offset, duty cycle, etc.) and to set measurement time. How many menu levels are just right?

(a) 2 levels (b) 3 levels (c) 4 levels (d) write in: _____ levels

4 (100%)

8. Additional information that I needed to use the current box:

2 (50%) duty cycle switch is backwards

1 (25%) basic operating procedures as with any piece of equipment

1 (25%) knobs not labeled

9. The problems I had were:

1 (25%) unstable signal with problem #2

1 (25%) oscilloscope

2 (50%) had to reset

10. What I liked best was:

2 (50%) easy to use and set up

2 (50%) light weight, compact

2 (50%) easy to set rough amp, fine frequency adjustment

11. What I disliked most was:

1 (25%) nothing really, it is awesome!

1 (25%) signal unstable

1 (25%) resistance of knobs

1 (25%) coarse frequency acts strangely when exceeding range

1 (25%) inability to set exact volt and frequency

Section Two: Reflect on the differences in completing traditional lab activities compared to the Pandora Box activities. Circle the best-fit answer.

12. The effectiveness of the box for your lab work compared to current instrumentation is:

Excellent	Very Good	Good	Fair	Poor	Very Poor
	2 (50%)	1 (25%)	1 (25%)		

13. Using your current instrumentation in the course and in the EE laboratory, how many hours per week have you spent on testing these experiments you did today?

Under 2	2-3	4-5	6-7	8-9	10 +
3 (75%)	1 (25%)				

14. Assuming you can use the box in the course, how many hours per week would you spend on testing these experiments you did today?

Under 2	2-3	4-5	6-7	8-9	10 +
3 (75%)	1 (25%)				

15. Assuming that the final box with PC controls can be taken home for testing experiments, would you do so? Why?

- 4 (100%) yes
- 1 (25%) yes, I prefer working other places than the lab. Lab usually too busy to get much work done.
- 1 (25%) absolutely, sometimes it's easier to work at home and this would be great
- 1 (25%) I can verify all possible states of the experiments at my own pace, and not have to worry about getting done before the next class comes in.
- 1 (25%) yes, because taking experiments home with me helps so I understand concepts

16. Assuming the final box is usable for all EE courses and a student would have to buy only one box for his/her entire study, how much would you or your family be willing to pay? [benchmark: a textbook for one EE course costs about \$80-\$100]

- 2 (50%) \$175
- 1 (25%) \$100
- 1 (25%) \$80-100, maybe more if very well designed

17. Assuming that the final box will be available for home use, would you use it more often for experiments (class experiments, your own tinkering, etc.)?

- (a) Yes
 - (b) No
 - (c) use it just often enough to finish required class experiments
- 4 (100%)

18. Assuming that the final box will be available for home use, would it enhance your education and experimental skills?

- (a) Yes
 - (b) No
- 4 (100%)

Why:

- 1 (25%) practical experience
- 1 (25%) having a consistent measurement device would be great. It is a pain to switch from one device to another in the current labs.
- 1 (25%) I would be able to implement own ideas and be able to test them
- 1 (25%) practical experience with signal operators and discrete components is valuable
- 1 (25%) could experiment with other things besides class projects at my convenience.

19. We would like to contact you to test the final box in the near future. If you are willing to participate, please write your name and email below.

Name: _____ Email: _____

PC at home: (a) yes (b) no
3 (75%)

20. Other comments:

- 3 (75%) dead spot
- 1 (25%) system seems unstable at random times
- 2 (50%) I will help with development
- 1 (25%) output buffer can't keep up with high frequency signals
- 1 (25%) low frequency looks nice
- 1 (25%) This is an amazing device!

THANK YOU!!!!!!!