

Appendix IX. DSO – Digital Storage Oscilloscope

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A. Introduction

A digital storage oscilloscope, *DSO* or *scope*, is a versatile electronic instrument used in many fields of basic and applied research to measure time-dependent voltage signals. Because an oscilloscope has very high resistance inputs (*like a voltmeter*), it draws very little current and thus usually does not disturb the circuit being studied. The oscilloscope is an essential part of several experiments in our introductory physics courses. Our scopes are not simplified for teaching but are versatile models suitable for use in research physics, engineering and medical laboratories.

B. The Controls

Refer to the picture in Figure 1. The function of each switch, if it's not obvious, has been described earlier or is described below.

1. Channel 1 Input (*In X-Y mode, this becomes the X-axis input.*) These are *BNC*-type connectors, which are a type of *coaxial* connector. The signal is at the center pin while the outer metal casing is a ground (*for this scope*).
2. Channel 2 Input (*In X-Y mode, this becomes the Y-axis input.*)
3. Calibration signal 3V (1 kHz at 3V.)

4. CH1 vertical position adjustor.
5. CH2 vertical position adjustor.
6. Horizontal position adjustor.
7. Channel 1 selector.
8. Channel 2 selector.
9. Vertical CH1 amplitude (voltage) dial.
10. Vertical CH2 amplitude (voltage) dial.
11. Horizontal time/period dial.
12. Display selector (will be used to select between YT (voltage/time) and XY (CH1 amplitude vs. CH2 amplitude) modes in conjunction with knob 17.)
13. The magic AUTO button which will always find the signal for you and display it.
14. When RUN/STOP is pressed, the scope will acquire waveforms continuously. When pressed again, the scope stops acquisition.
15. When pressed, the scope will acquire a single waveform.
16. Menu ON/OFF toggles the last-displayed menu On/Off.
17. Menu option button; press a menu option button adjacent to your selection.
18. Menu option button; press a menu option button adjacent to your selection.
19. Press to get to the next page of options.

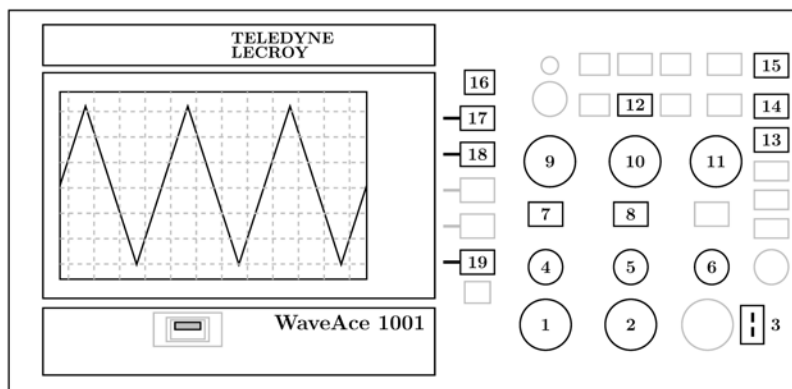


Figure 1: Digital Storage Oscilloscope

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