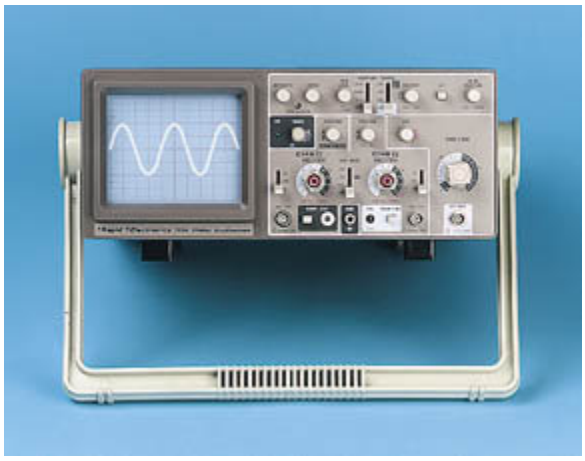
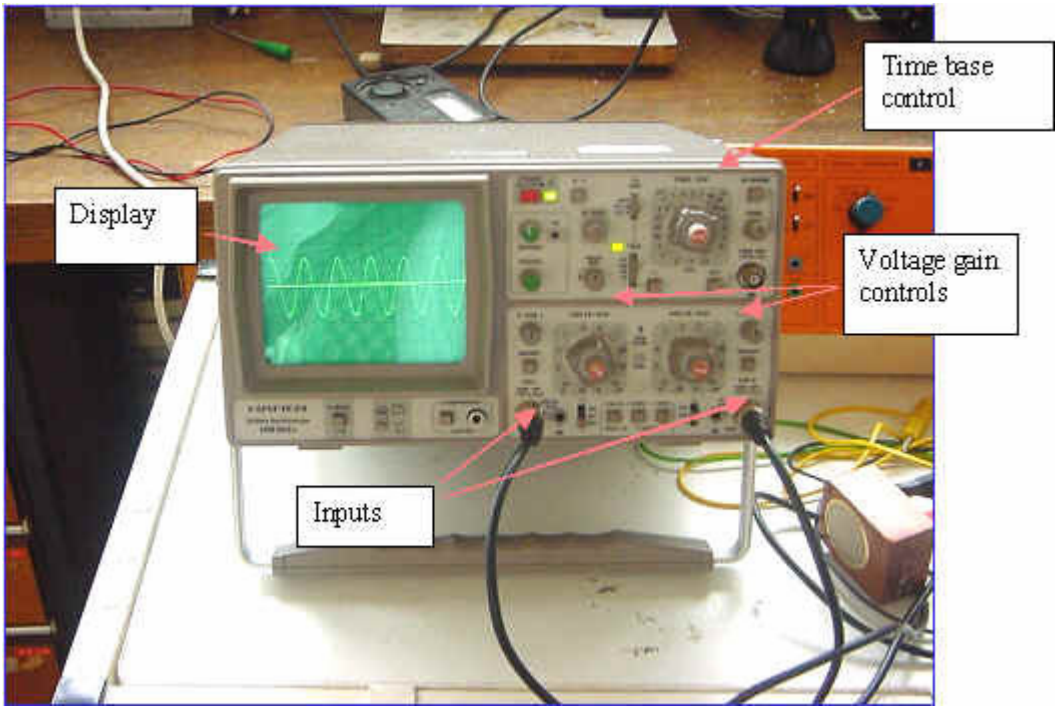
CHAPTER 9: ELECTRONICS

Extra Info

Cathode - Ray Oscilloscope



A cathode-ray oscilloscope, abbreviated CRO, or just called a scope, is a modern electronic test equipment that allows signal voltages to be displayed on a screen. The screen actually displays a graph of potential difference on the vertical axis against time on the horizontal axis.



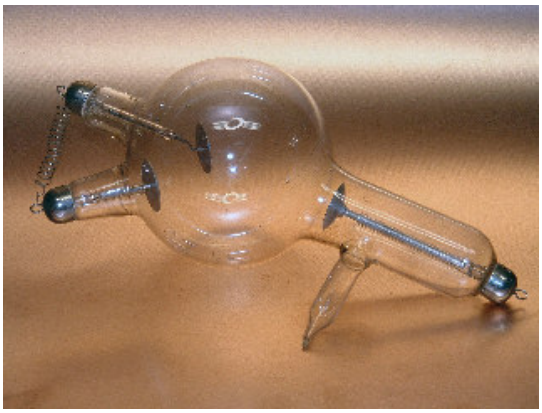
One of the most common uses of scopes is for troubleshooting malfunctioning electronic equipment such as TV , computers , digital equipment such as electronic mixers , amplifiers etc.

A very important advantage of using a scope is that it can **graphically show signals**, whereas a conventional voltmeter may show only a fixed value or a fluctuating reading.

The early version of the scope consists of a cathode-ray tube, an evacuated glass envelope which is very similar to the black-and-white television set. Electrons produced by the electron gun are accelerated by a high potential difference of about 10 kV to strike a phosphor-coated screen .The kinetic energy of the electrons is then converted into visible light and a bright spot is seen on the screen .

An applied potential difference across a pair of vertical plates will deflect the dot vertically. A varying potential difference across the horizontal plates (called the time base) sweeps the dot from the left to the right of the screen and back to the left quickly .The moving dot thus traces out the signal display on the screen.

Early Cathode –ray Tubes



Visit http://members.chello.nl/~h.dijkstra19/page3.html for more information about cathode-ray tubes.

Radar Cathode –ray Tube