Answer on Question #65935-Physics-Other

An amplitude modulated carrier wave is viewed on an oscilloscope screen. The maximum amplitude is 50V and minimum amplitude is 8V. Calculate the percentage modulation index. What is the amplitude of unmodulated carrier wave?

Solution

$$m = \frac{V_{max} - V_{min}}{V_{max} + V_{min}} = \frac{50 - 8}{50 + 8} = 0.724$$

The percentage modulation index is 72.4%.

The amplitude of unmodulated carrier wave is

$$E_C = \frac{V_{max} + V_{min}}{2} = \frac{50 + 8}{2} = 29\ V.$$