

Answer on Question #69496, Physics / Electric Circuits

A 4-bit DAC produces 22 mV output for a digital input of 1011. What is the resolution for this DAC? Find out V_{out} for 0101.

Answer:

Resolution of DAC is the number of possible output levels the DAC is designed to reproduce:

$$2^4 = 16$$

Input 1011 equal to state level 11, what is the mean, that quantization level of DAC is

$$22 \text{ mV} / 11 = 2 \text{ mV}$$

Input 0101 equal to state level 5, and output of DAC must be:

$$V_{out} = 2 \text{ mV} * 5 = 10 \text{ mV}$$

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