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A screen shot of a graph

Description automatically generated

Transient analysis was performed with a time step of 10 microseconds. The input is shown by the red line, and the output by the blue. The signal is inverted and its amplitude is increased by a factor of 2. Because the configuration of the schematic is inverting, as seen by the input signal being connected to the inverting input, the inversion was expected in the simulation. Additionally, due to R1 being twice the value of R2, it was expected that the output amplitude would be double the input amplitude.

A graph on a black background

Description automatically generated

AC small signal analysis was performed using 10 points per decade, a start frequency of 10Hz, and a stop frequency of 10MHz. The gain is shown by the solid line, and the phase is shown by the dotted line. At a frequency of approximately 100kHz, the gain begins to decrease. Furthermore, the phase begins to decrease from 180 degrees around 10kHz, leveling out at 90 degrees. This is the typical RC behavior seen by inverting OP AMPS, where gain and frequency are decreased at higher frequencies, so the results of this simulation were expected.