The Application Notice for NY9A001A/001B Using PWM Amplifier

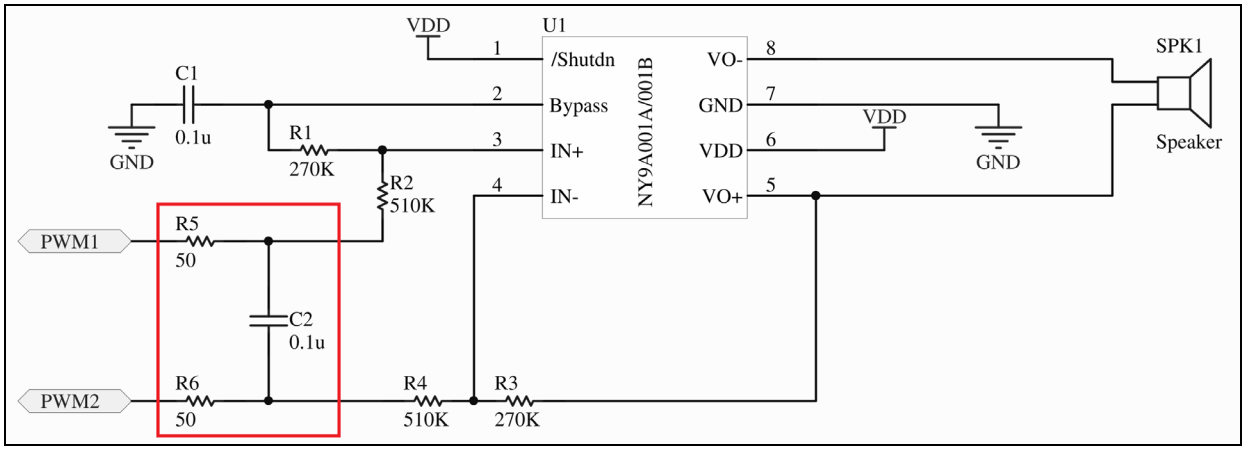
Description: When executing the PWM amplifier through NY9A001A/001B, it's recommended to add RC low-pass filter on PWM to avoid the waveform distortion and noise.

Reason: The signal bandwidth of NY9A001A/001B is DC~20KHz, but the PWM signal bandwidth exceeds the range, which will cause PWM signal distortion and noise. Users can filter the high-frequency carrier through the RC low-pass filter and amplify the PWM signals.

Solution: Add the RC low-pass filter between the PWM signal and NY9A001A/001B amplifying circuit as the red box shown below. Set the cutoff frequency between 15KHz~20KHz, slightly lower than the bandwidth of NY9A001A/001B.

The cutoff frequency formula is $f_C=1/(2\pi RC)$, if the RC low-pass filter uses 50Ω+50Ω and 0.1uF respectively, the cutoff frequency is about 16KHz as the red box shown below.

Illustration: Execute the differential amplifier when the PWM signals pass the RC low-pass filter.



Note: NY9A001A/001B is not suitable for differential amplification of PWM signals without RC low-pass filtering, otherwise distortion will easily occur and affect the sound quality.