

Preamplifier Analysis :

$$D) \text{ Gain} = A_v = \frac{V_{out}}{V_{in}}$$

$$A_v = 1 + \frac{R_f}{R} = 1 + \frac{10 + R}{10} = 2 + \frac{R}{10} = (2, 12) = (1.778, 11.204)$$

$$A_v(\text{min}) = \frac{1.92}{1.08} = 1.778$$

$$A_v(\text{max}) = \frac{1.08}{1.08} = 11.204$$

HPF

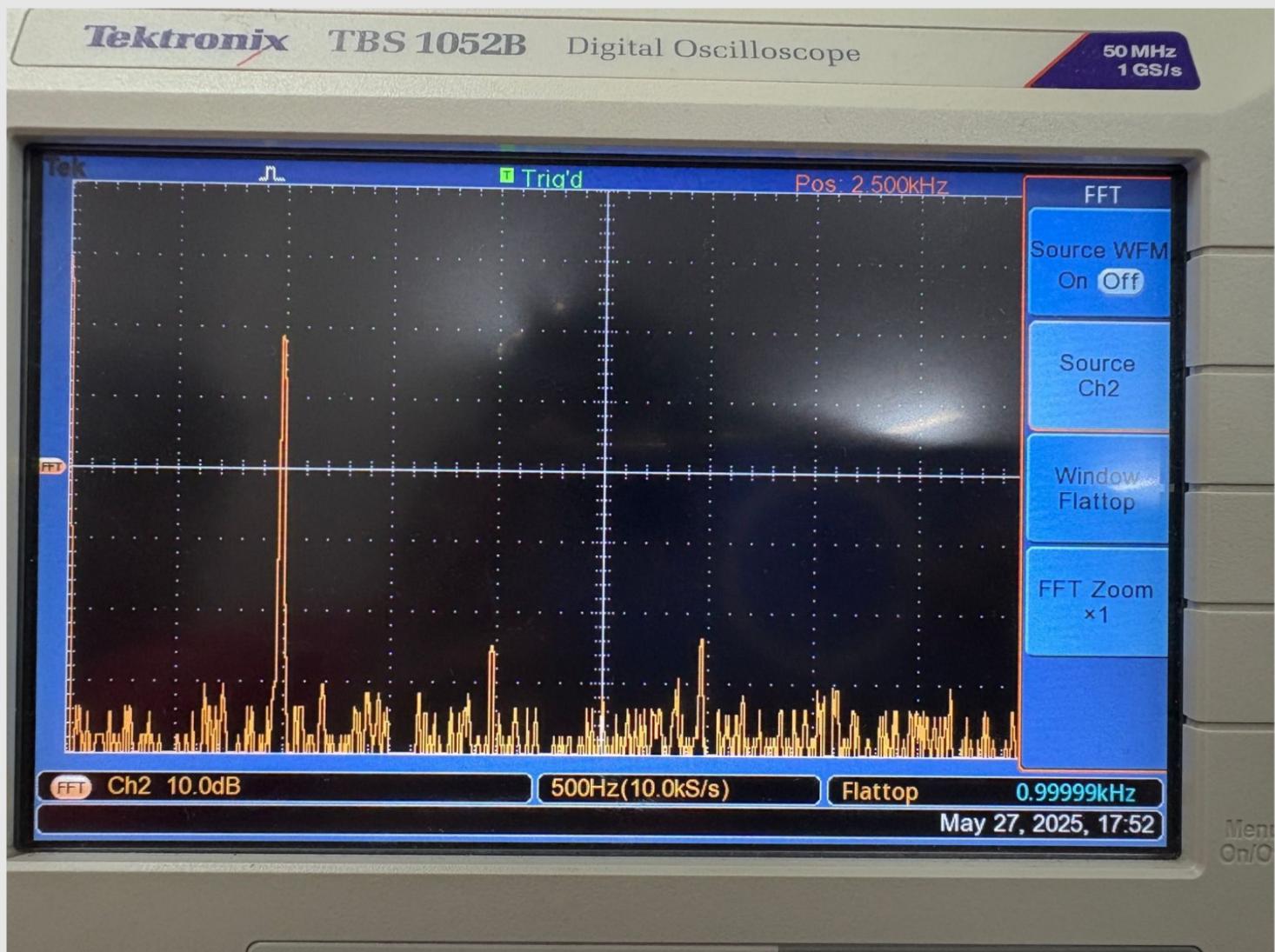
$$f_H = \frac{1}{2\pi R C} = \frac{1}{2\pi \times 98 \times 10^3 \times 1 \times 10^{-6}} = \underline{\underline{1.624 \text{ Hz}}}$$

Class AB power amplifier

$$A_v(\text{Power amplifier}) = \frac{V_{out}}{V_{in}} = \frac{7.76 \text{ V}}{7.84 \text{ V}} = \underline{\underline{0.99}}$$

$$\eta = \frac{\text{output power}}{\text{input power}} \times 100\%.$$

output when give 1kHz Sine input.



output and input signals

