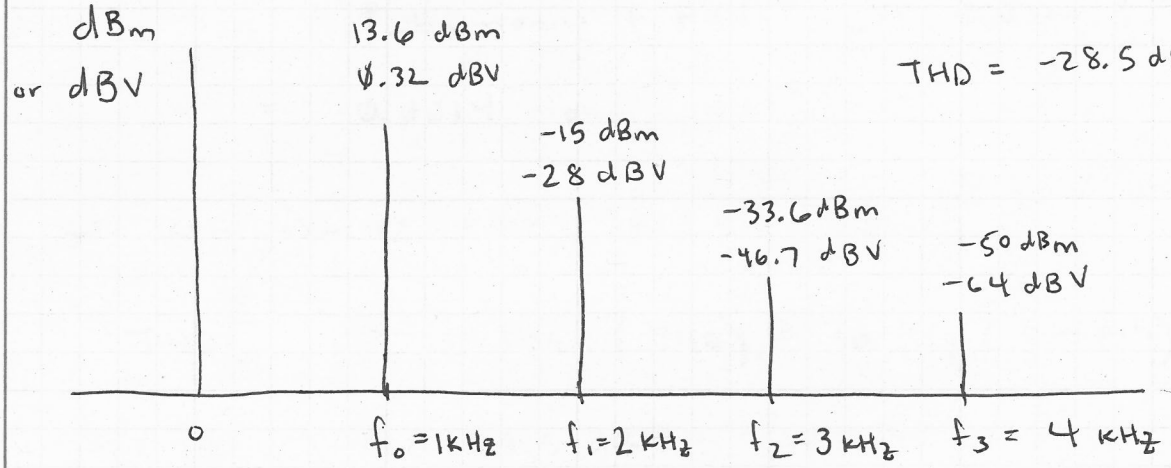
From the HP Signal Analyzer you can determine the frequency content of your output signal and associated harmonic distortion. For example the data below results from the $3\ V_{pp}$ output of my cascaded amplifier



Note $dBV = 20 \log (V_{rms})$ $\quad V_{rms} = V_{amp}/\sqrt{2}$

$dBm = 10 \log (P_{ower})$ Power is in mW

Using the first 3 harmonics, the signal analyzer says

$$THD = -28.5\ dB$$

So what does this number mean and what % power is in the three harmonics f_1 through f_3?

Let's define

$$THD\ \% = \frac{\text{power in harmonics}}{\text{total power}} = \frac{P(f_1) + P(f_2) + P(f_3)}{P(f_0) + P(f_1) + P(f_2) + P(f_3)}$$

$P(f_0) = 10^{13.6/10} = 22.91\ mW$

$P(f_1) = 10^{-15/10} = 0.0316\ mW = 31.6\ \mu W$

$P(f_2) = 10^{-33.6/10} = 4.37 \cdot 10^{-4}\ mW = 0.437\ \mu W$

$P(f_3) = 10^{-50/10} = 1 \cdot 10^{-5}\ mW = 10\ nW$

} Convert all the dBm power to power in mW

So the power contained in first 3 harmonics is

$$P(f_1) + P(f_2) + P(f_3) = 0.0321 \text{ mW} = P\_harmonics$$

then

$$THD = \frac{P\_harmonics}{P\_harmonics + P(f_0)} = \frac{0.0321}{0.0321 + 22.91}$$

$$= 0.0014 \quad \text{or} \quad 0.14\%$$

We can express this in dB as

$$THD_{dB} = 10 \log (THD) = 10 \log (0.0014)$$

$$= -28.5 \text{ dB} \qquad \text{Q.E.D.}$$

this is what the signal analyzer displayed earlier stated another way

0.14 % of the power is in the harmonics

99.86 % of the power is at the fundamental f_0

This seems pretty good. As a point of comparison, the Keysight function generator in the lab specifies THD = 0.03 % on the data sheet or −35 dB.