

Line Spectra Example

Example #1: Consider the signal

$$x(t) = 9 + 24 \cos(2\pi \cdot 440 \cdot t - \pi/4) \\ + 14 \cos(2\pi \cdot 5000 \cdot t + \pi/8) + 8 \sin(2\pi \cdot 8000 \cdot t)$$

- Find the fundamental frequency, f_0 in Hz
 - Sketch the two-sided amplitude and phase spectra (two plots)
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Example #2: Consider the signal

$$x(t) = -8 + 10 \cos(2\pi \cdot 1000 \cdot t - \pi) \\ + 20 \sin(2\pi \cdot 2500 \cdot t + \pi/4)$$

- Find the fundamental frequency, f_0 in Hz
 - Sketch the two-sided amplitude and phase spectra (two plots)
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