3.8   The passband for the digital filter should be: $f_c = 25$ kHz. Hence, the next image of the passband starts at $f_{sample} - f_c$. Using MATLAB, we find that a third-order Butterworth filter, with 1 dB in the passband, has an attenuation of 40 dB at $6 f_c = 150$ kHz, i.e.,

$$\frac{f_{sample} - f_c}{f_c} = 6 \implies f_{sample} = 7 \cdot 25 = 175 \text{ kHz}$$