

Concept Question 6-21: If brick-wall lowpass filters are used in connection with a signal bandlimited to f_{\max} and sampled at f_s , what should the filter's cutoff frequency be when used as (a) an anti-aliasing filter and (b) a reconstruction filter?

For both the anti-aliasing and the reconstruction filters, we should have $2 f_{\max} < f_s$: See Fig. 6-85.

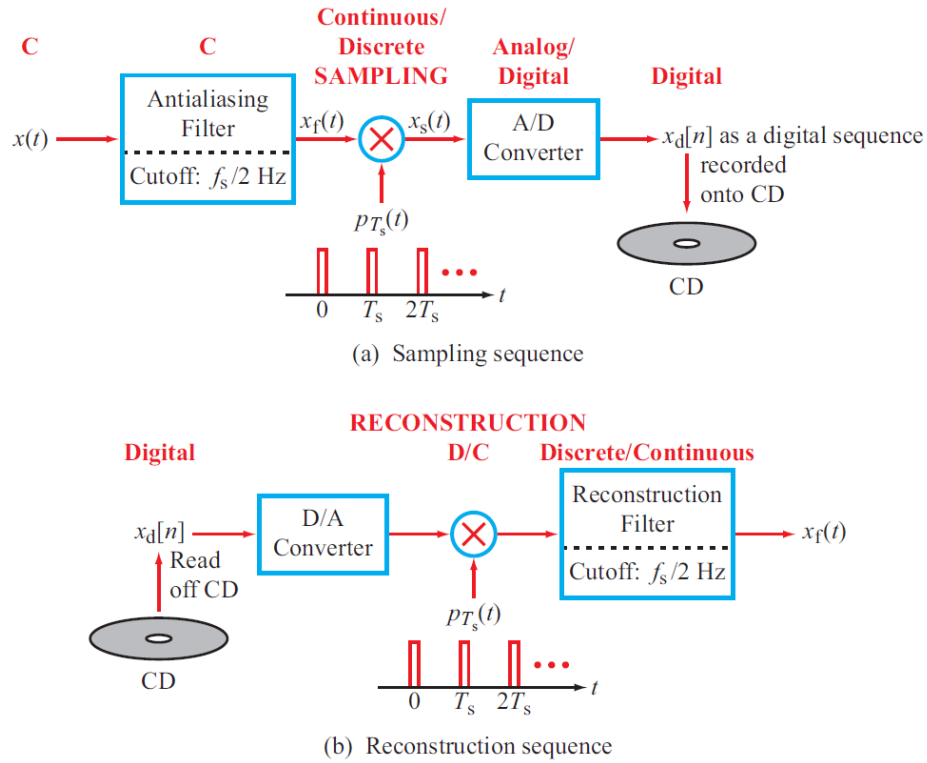


Figure 6-85: DSP system with C/D and D/C to convert between continuous time and discrete time, and A/D and D/A to convert between analog and digital.