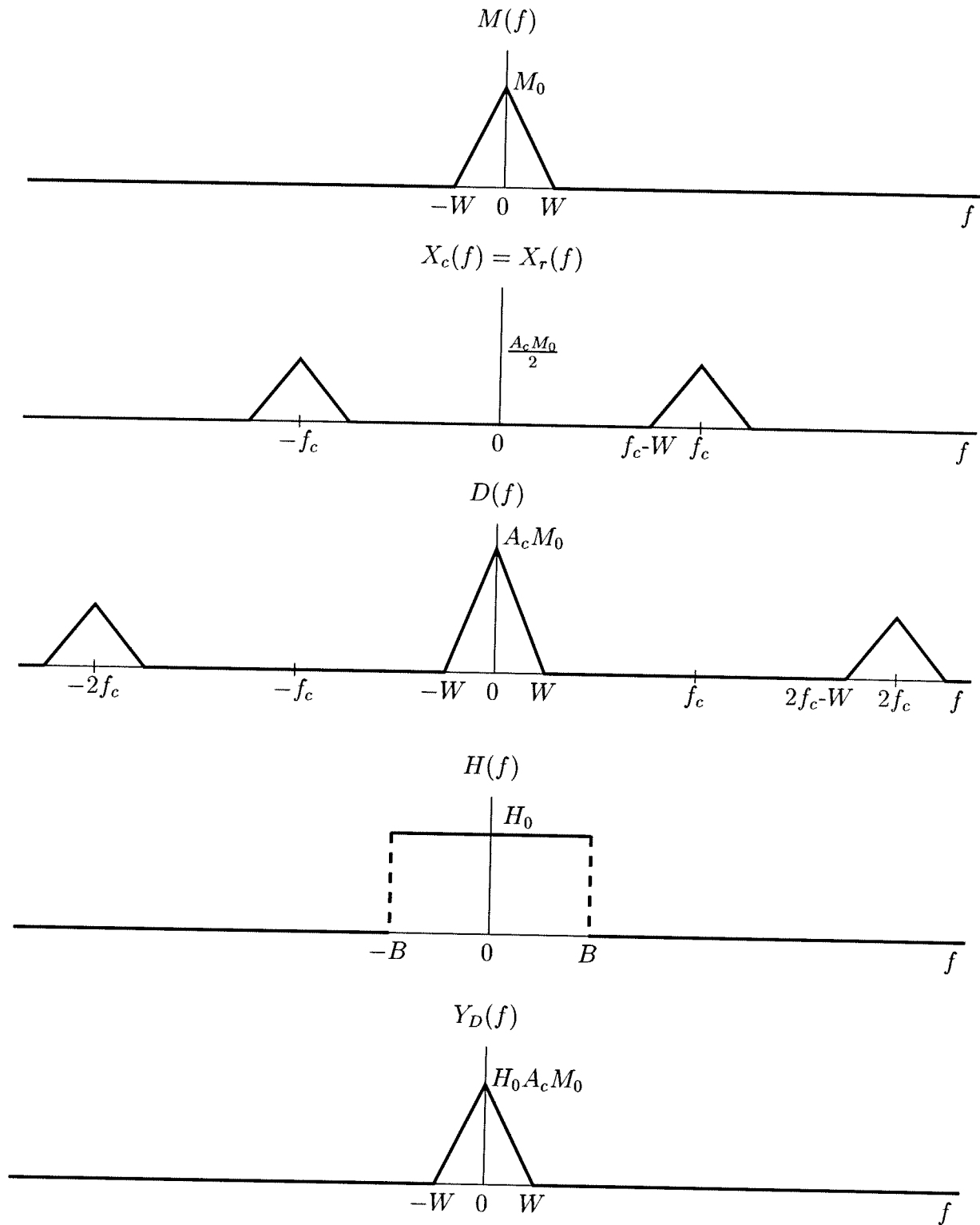


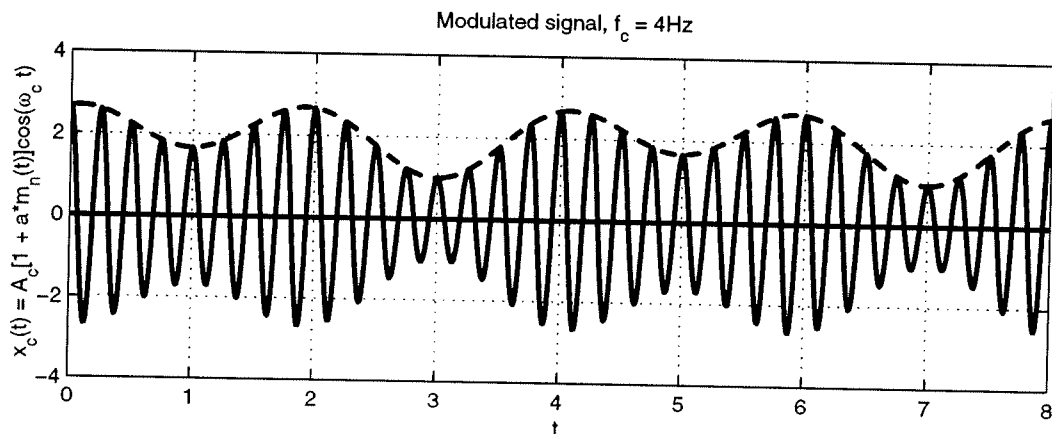
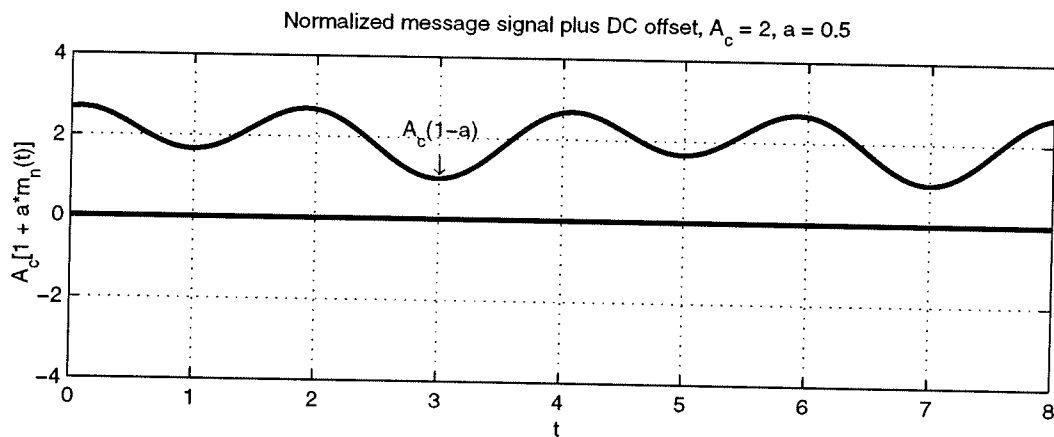
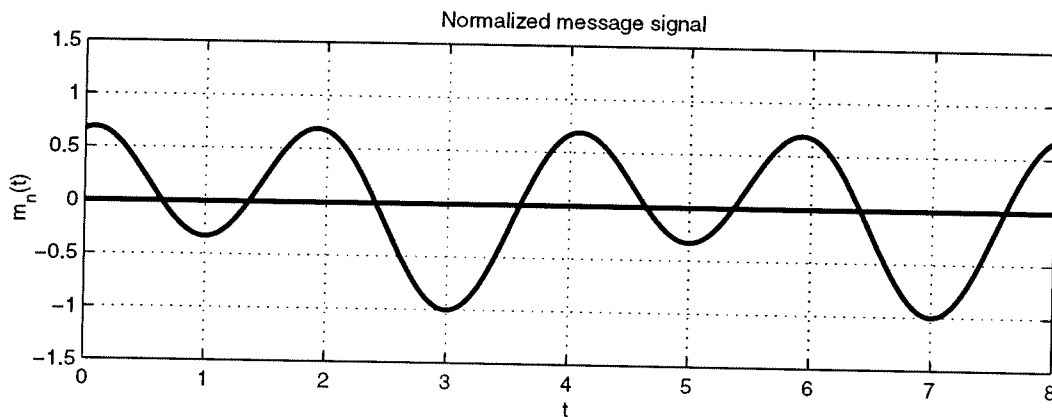
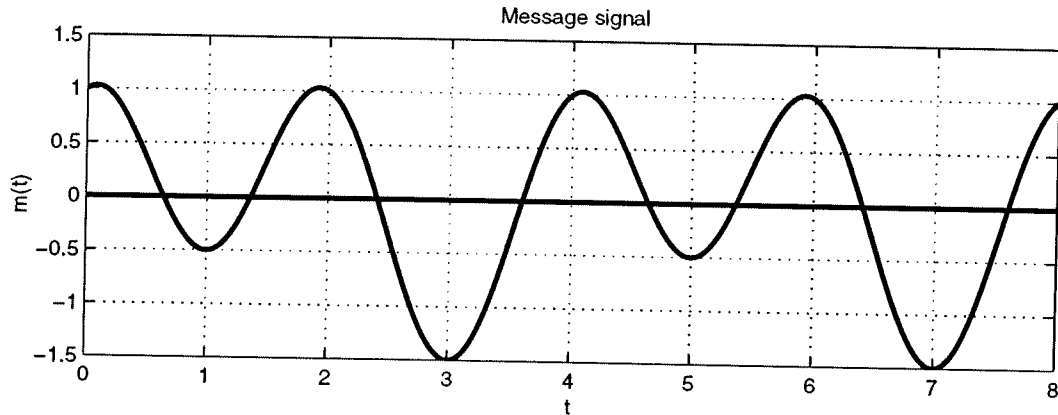
Double-Sideband Modulation (DSB)

Modulation and Recovery of a DSB-modulated Signal



Amplitude Modulation (AM)

$$m(t) = \cos(\pi t) + \frac{1}{2} \sin\left(\frac{\pi}{2} t\right), \quad m_n(t) = \frac{m(t)}{|\min[m(t)]|}, \quad A_c = 2, \quad a = \frac{1}{2}, \quad f_c = 4\text{Hz}$$



Amplitude Modulation (AM)

Demodulation via Envelope Detection

$$x_r(t) = A_c [1 + am_n(t)] \cos(\omega_c t)$$

