Figure 5.1 *Digital-to-analog conversion*

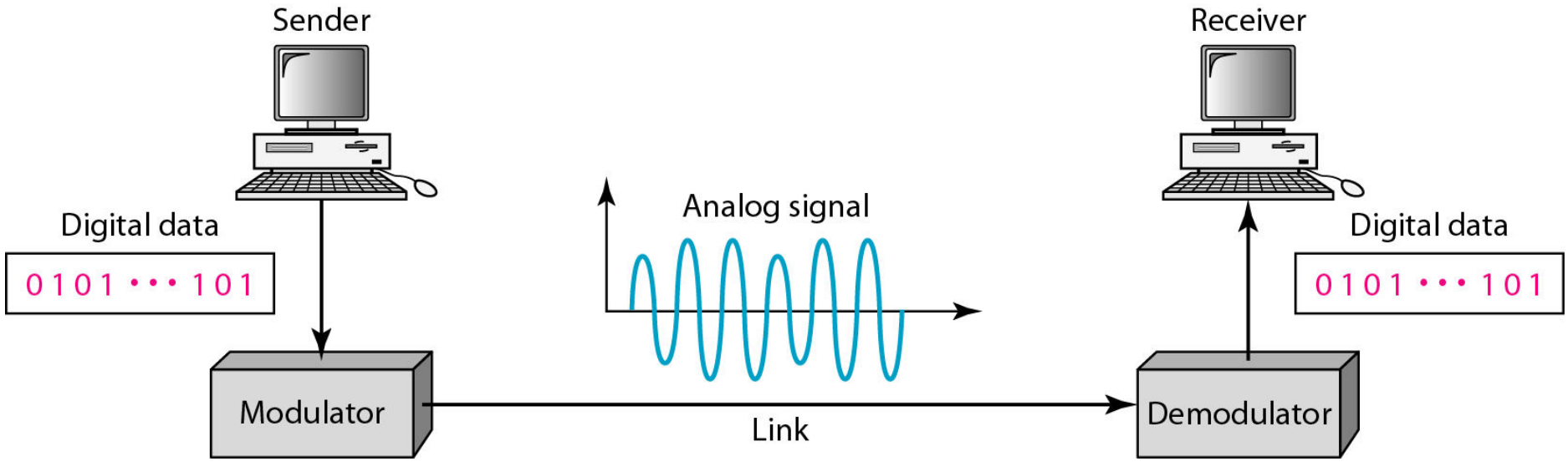


Figure 5.2 *Types of digital-to-analog conversion*

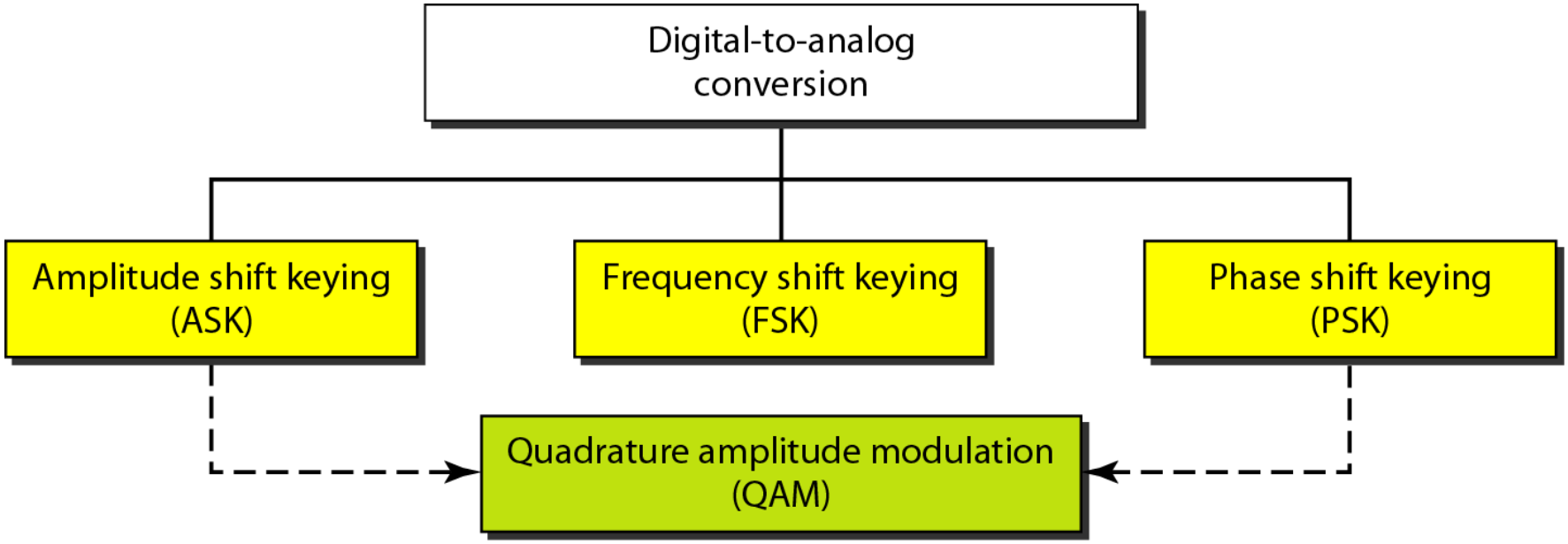


Figure 5.4 *Implementation of binary ASK (BASK)*

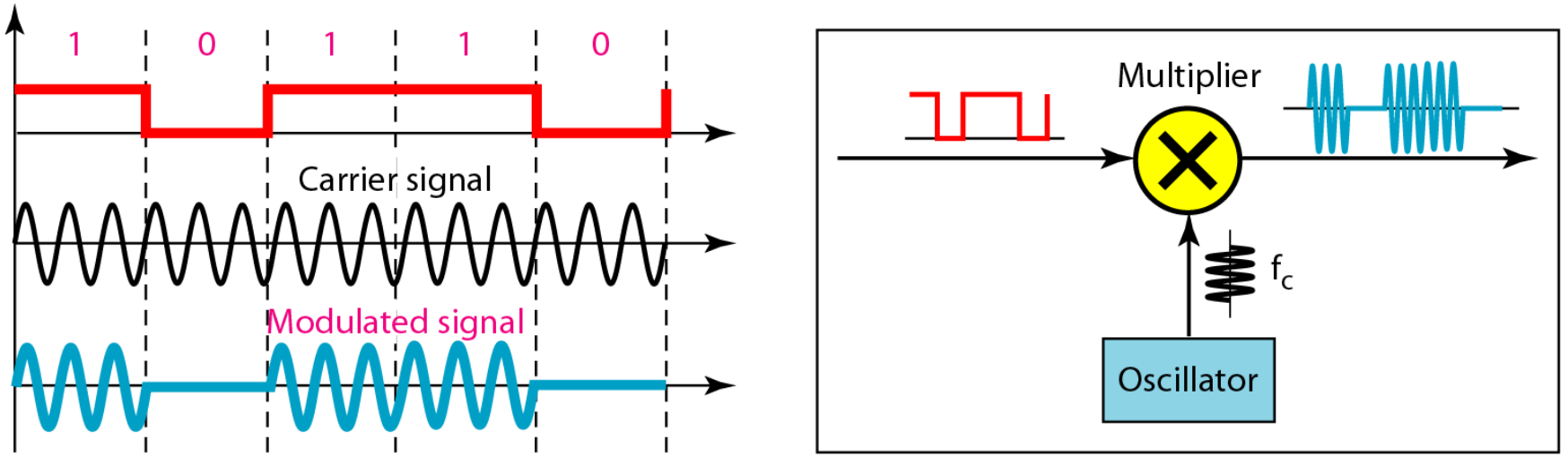
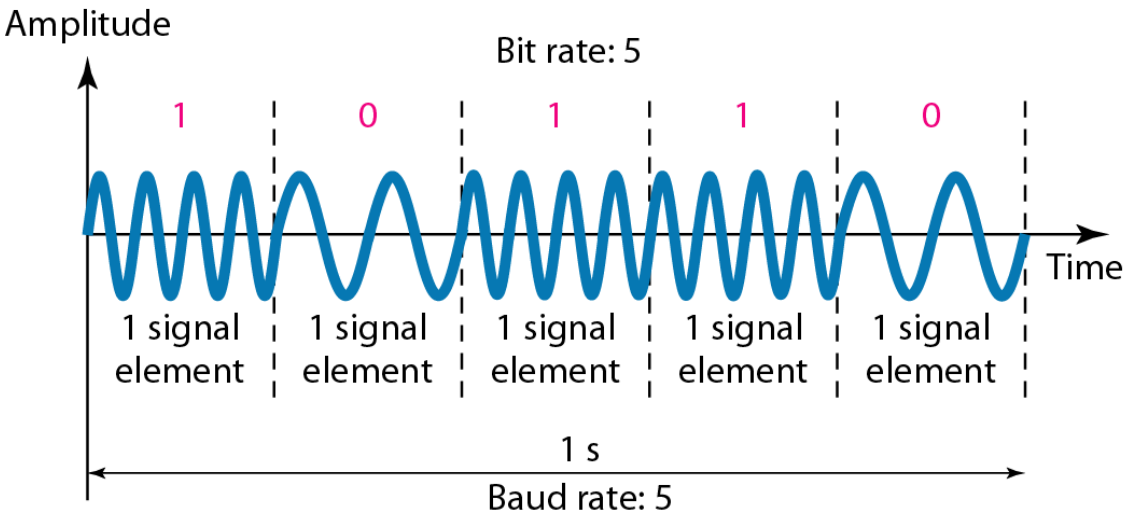
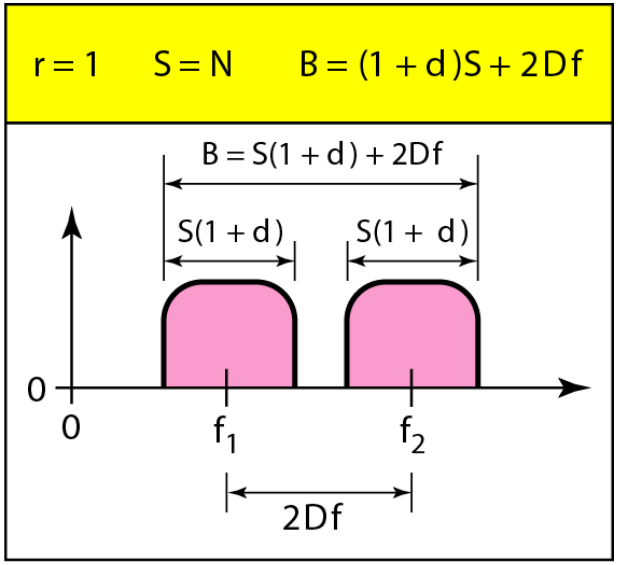


Figure 5.6 *Binary frequency shift keying (BFSK)*





d = 1 for BFSK

Figure 5.7 *Implementation of BFSK*

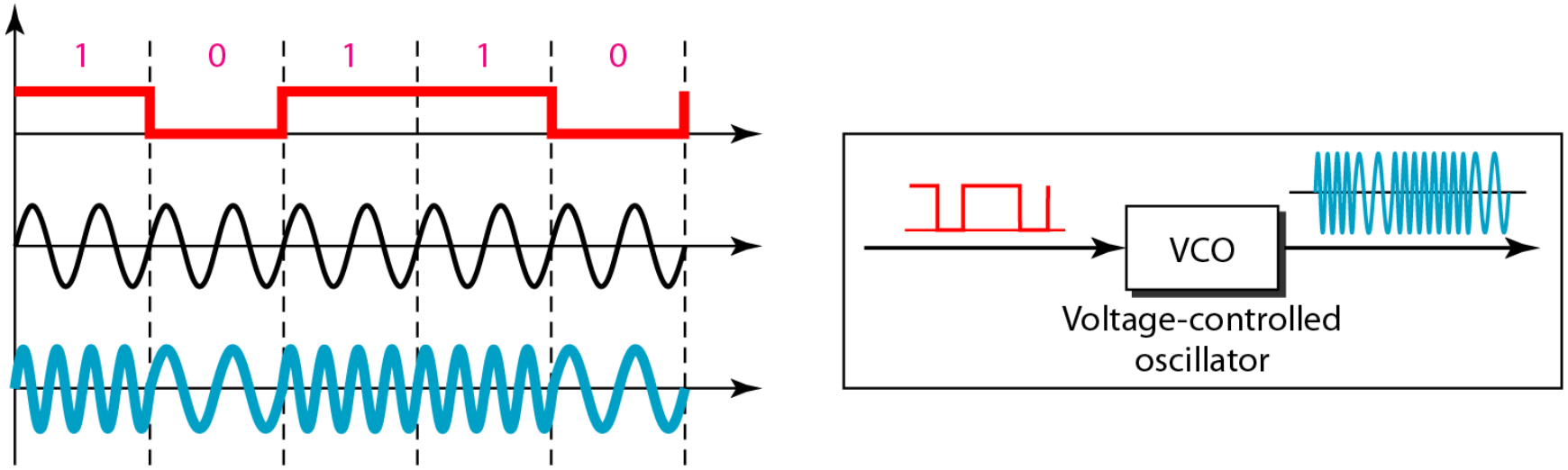
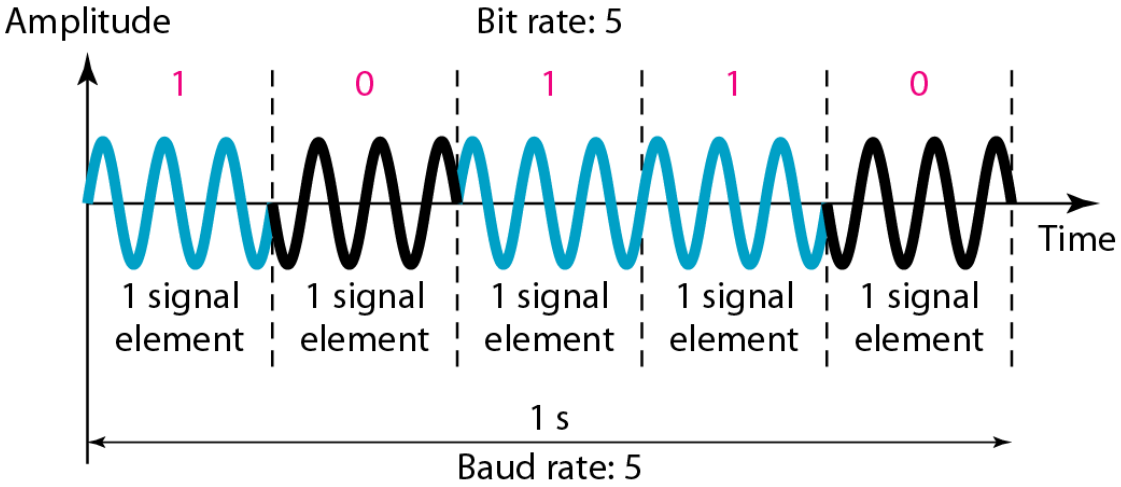
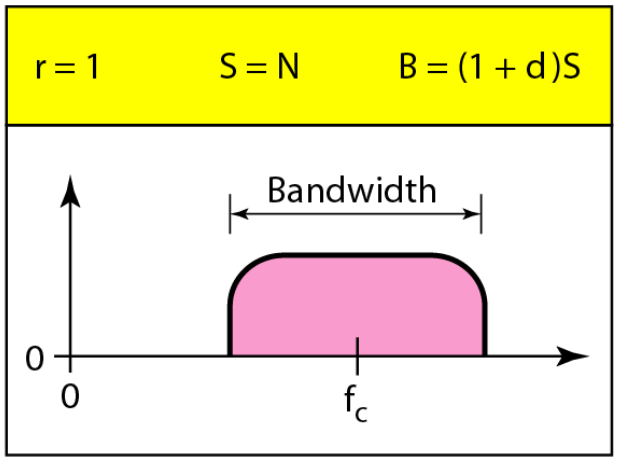


Figure 5.9 *Binary phase shift keying (BPSK)*





d = 0 for PSK

Figure 5.10 *Implementation of BPSK*

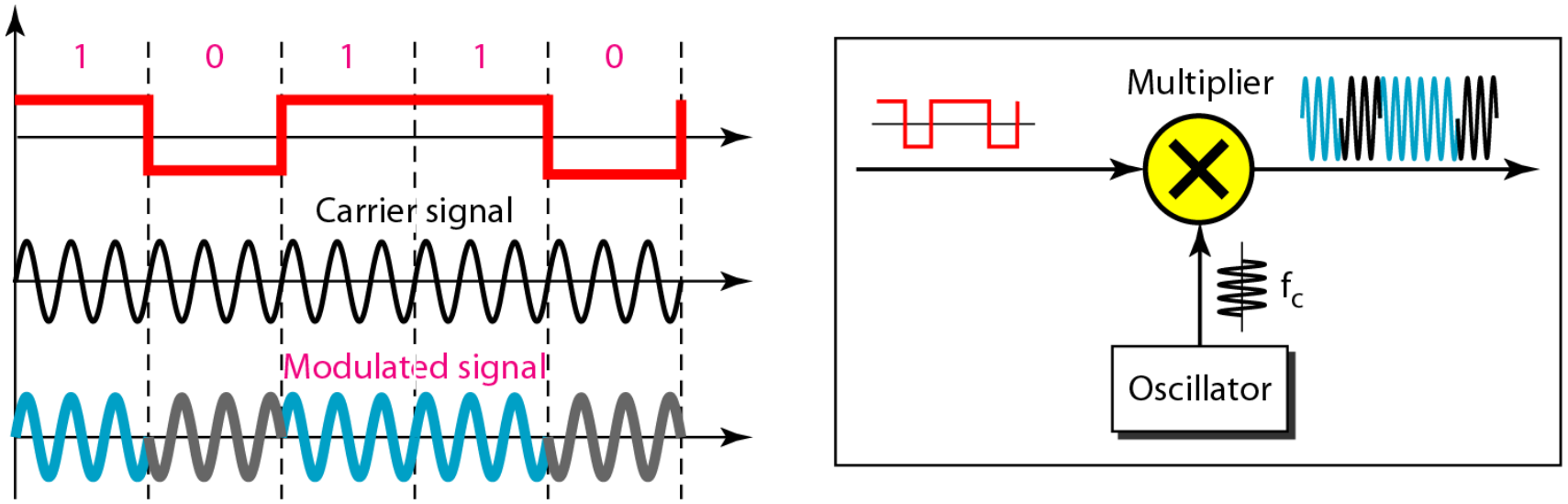


Figure 5.15 *Types of analog-to-analog modulation*

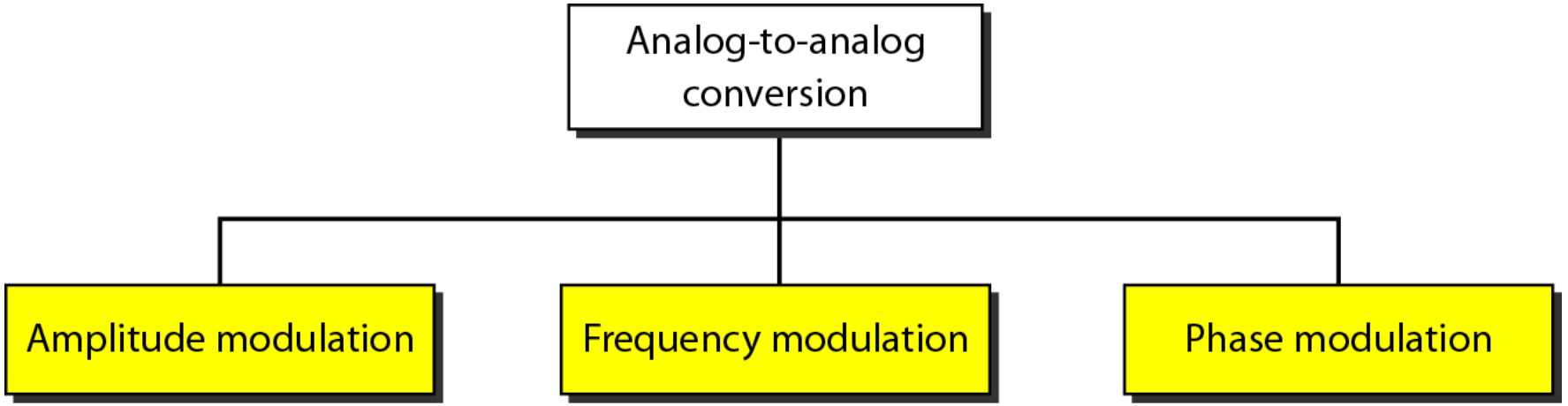
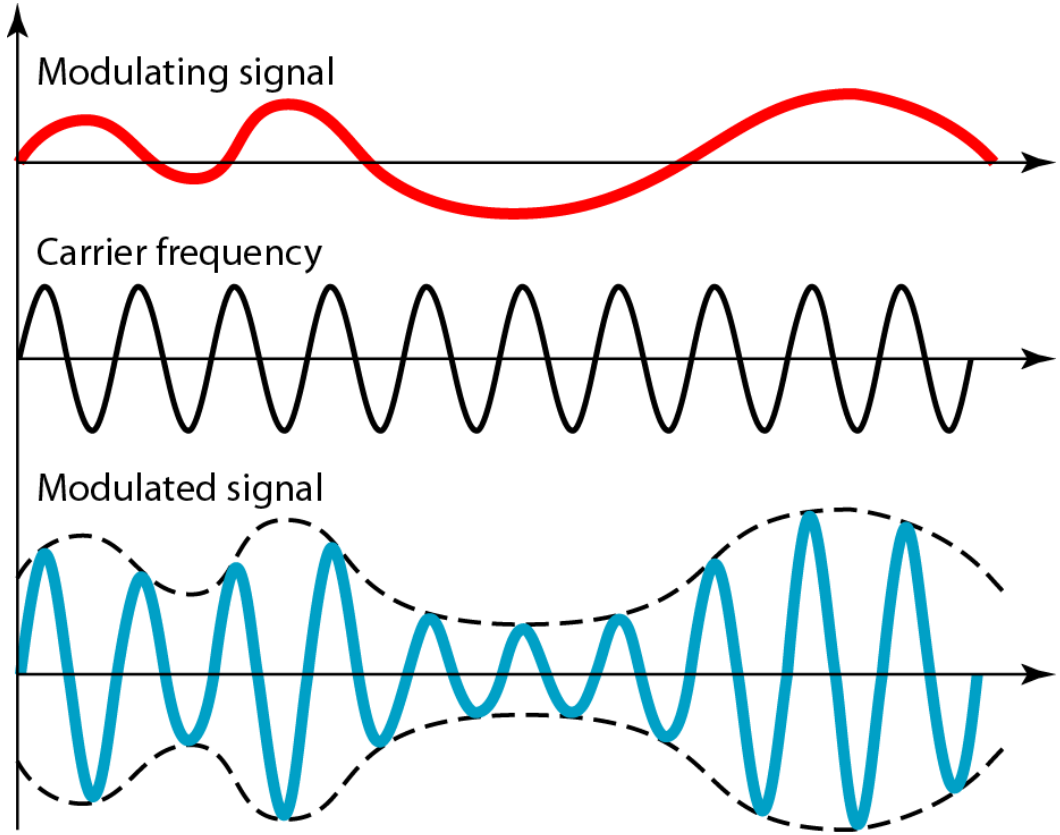
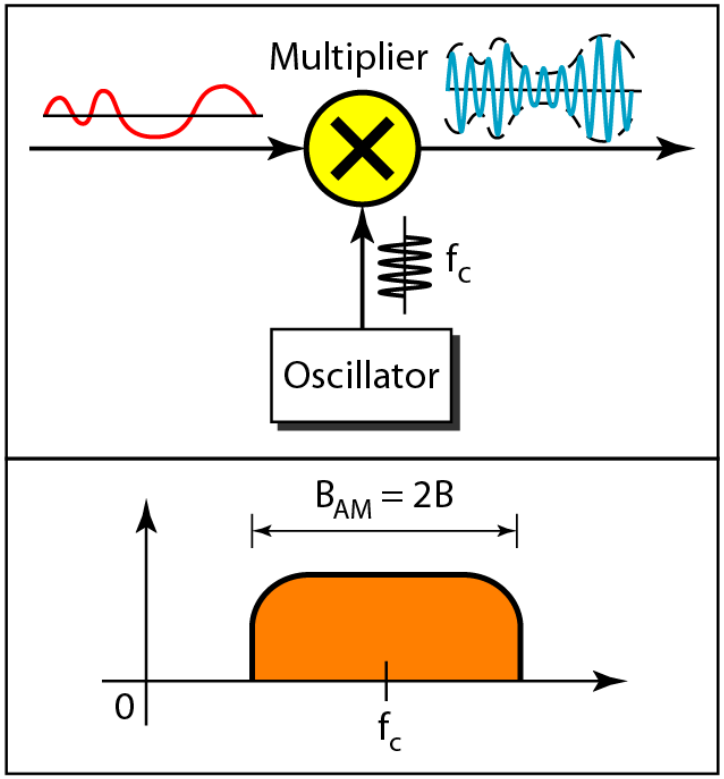


Figure 5.16 *Amplitude modulation*

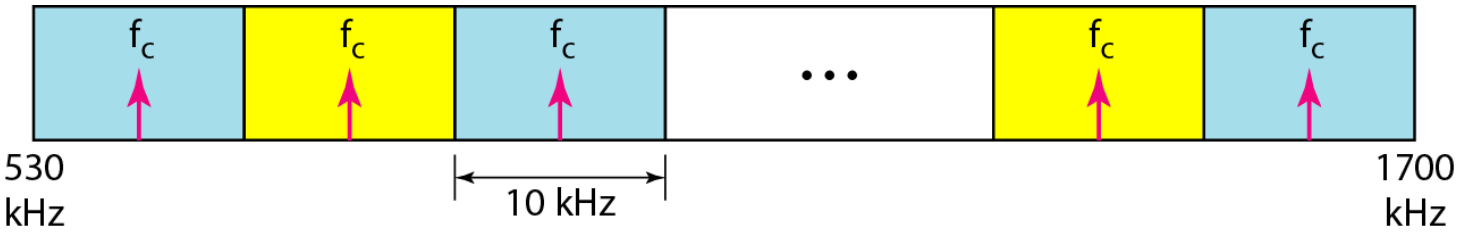




Note

The total bandwidth required for AM can be determined from the bandwidth of the audio signal: $B_{AM} = 2B$.

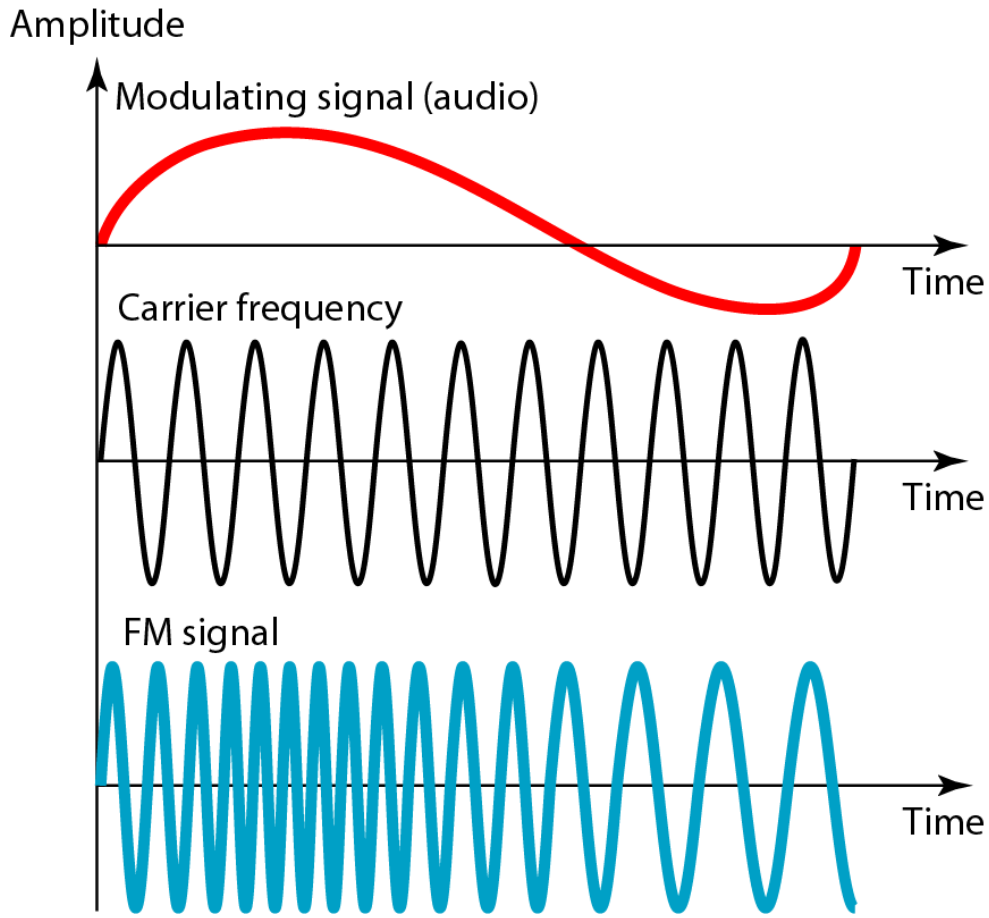
Figure 5.17 *AM band allocation*



Note

The total bandwidth required for FM can be determined from the bandwidth of the audio signal: $B_{FM} = 2(1 + \beta)B$.

Figure 5.18 *Frequency modulation*



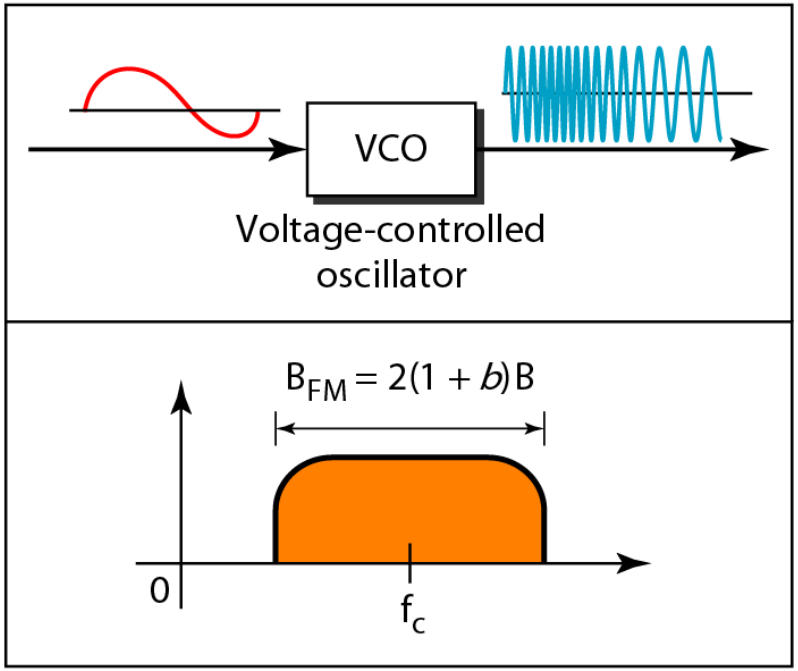


Figure 5.19 *FM band allocation*

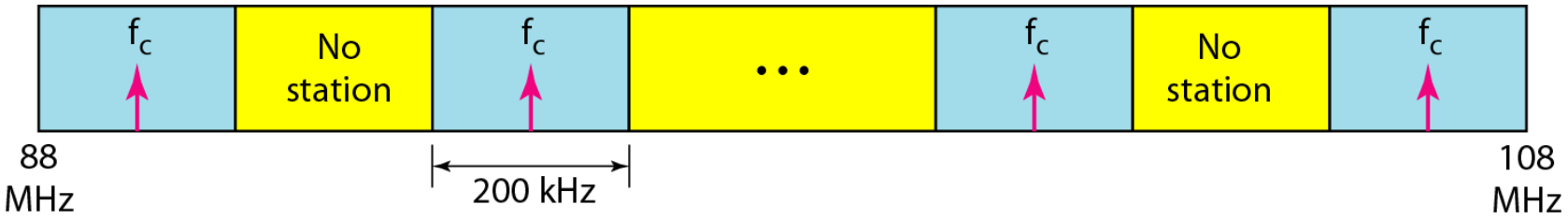
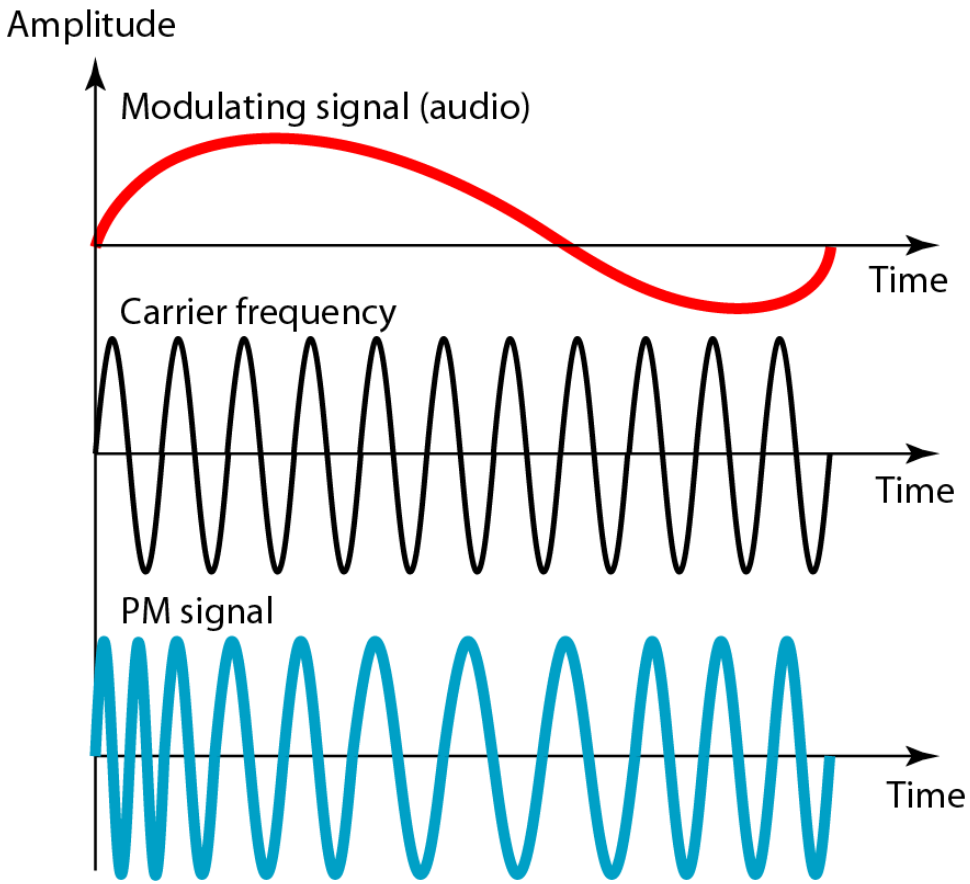
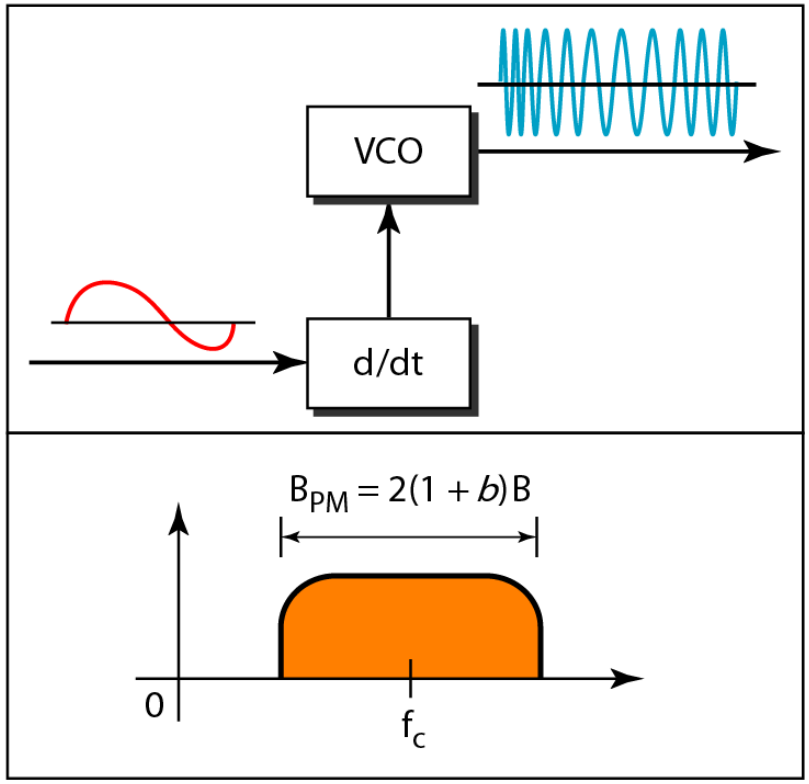


Figure 5.20 *Phase modulation*





Note

The total bandwidth required for PM can be determined from the bandwidth and maximum amplitude of the modulating signal:

$$B_{PM} = 2(1 + \beta)B.$$