

# Analog Transmission of Digital Data



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# 5-1 DIGITAL-TO-ANALOG CONVERSION

*Digital-to-analog conversion is the process of changing one of the characteristics of an analog signal based on the information in digital data.*

## Topics discussed in this section:

Aspects of Digital-to-Analog Conversion

Amplitude Shift Keying

Frequency Shift Keying

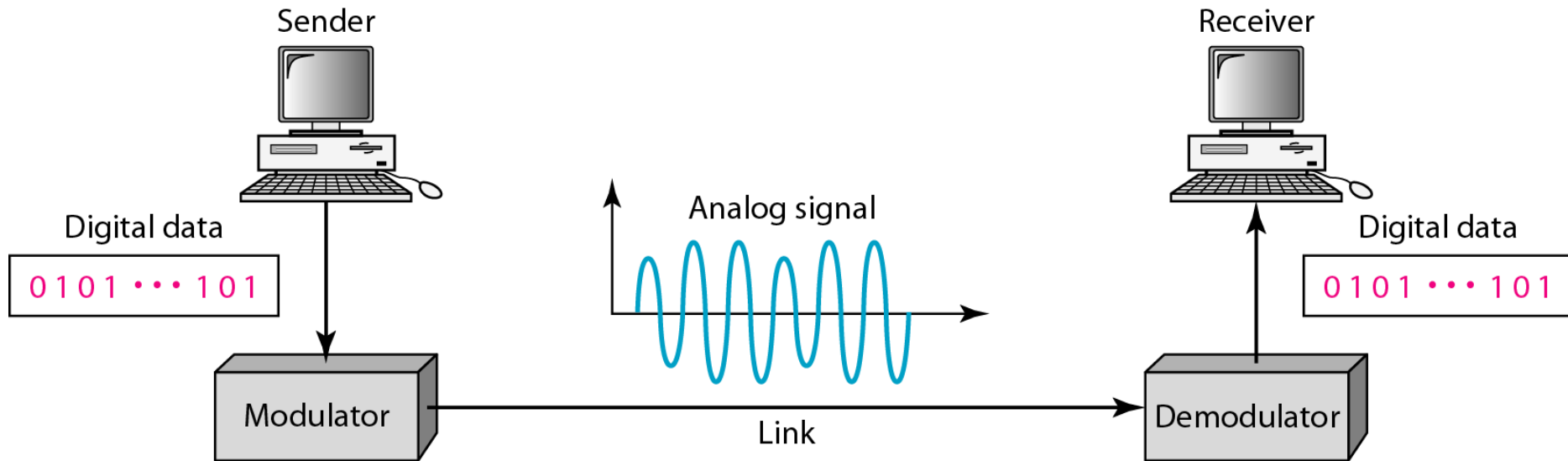
Phase Shift Keying

Quadrature Amplitude Modulation

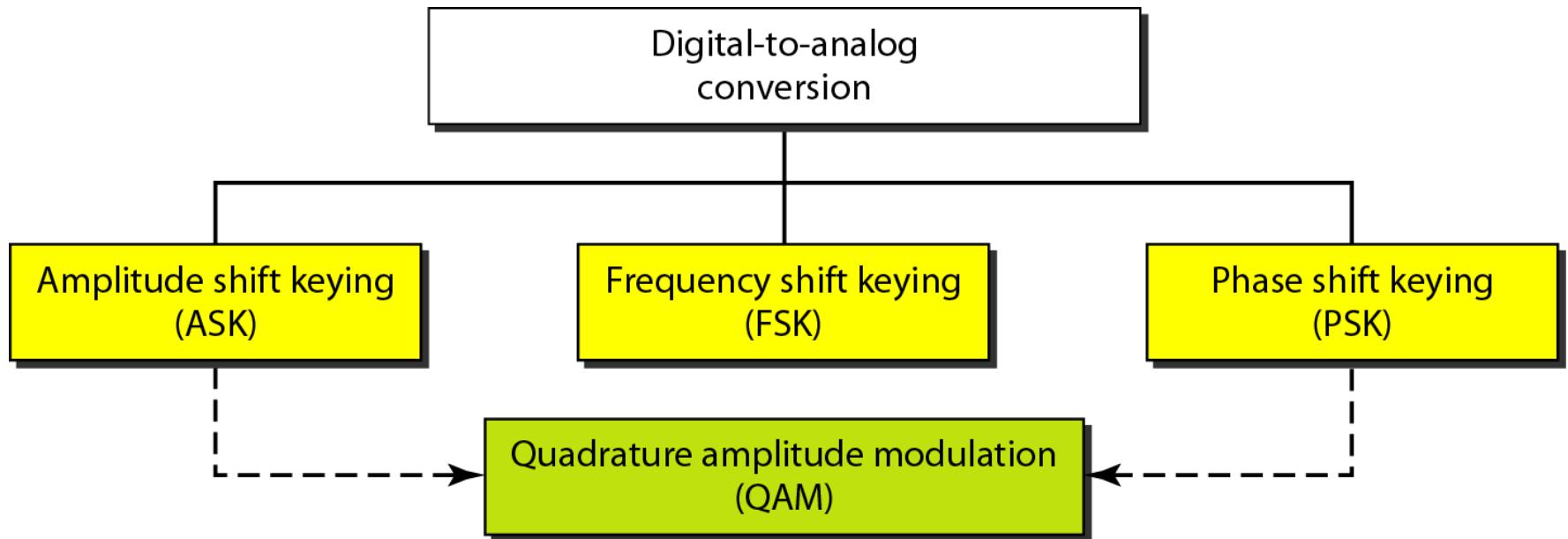
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**Figure 5.1** *Digital-to-analog conversion*

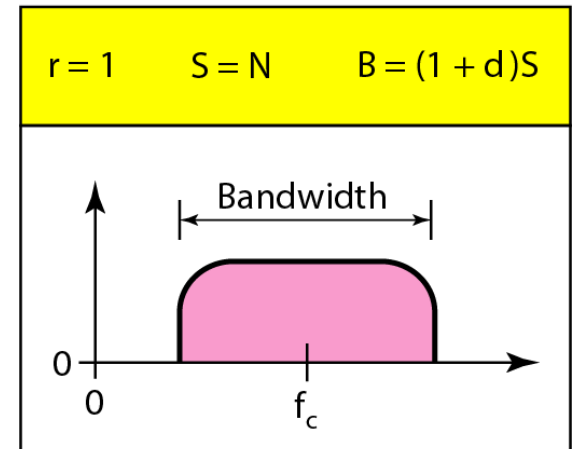
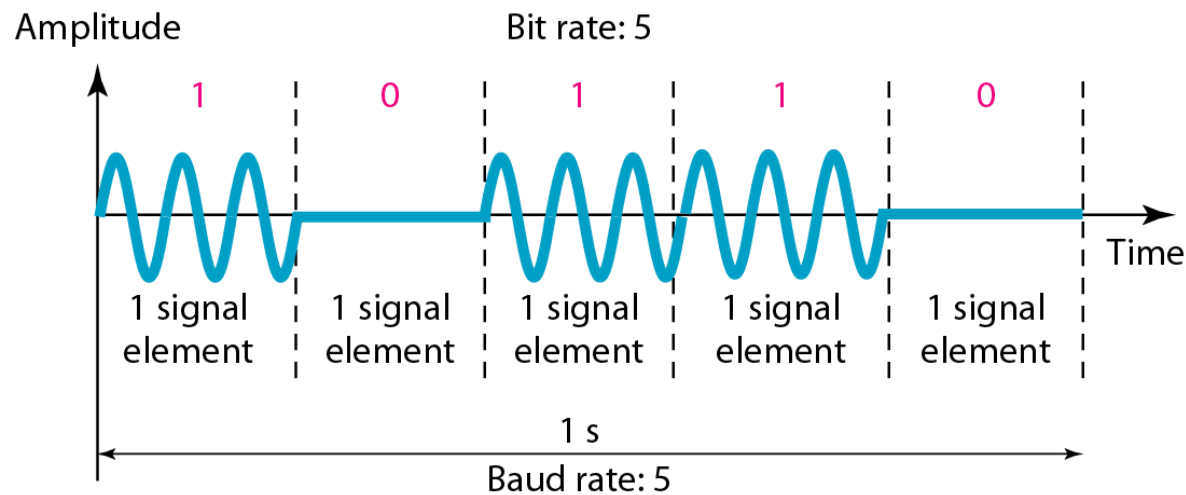
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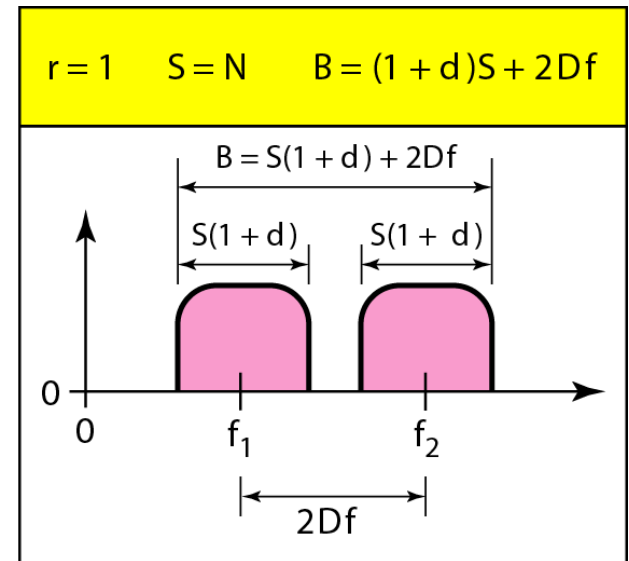
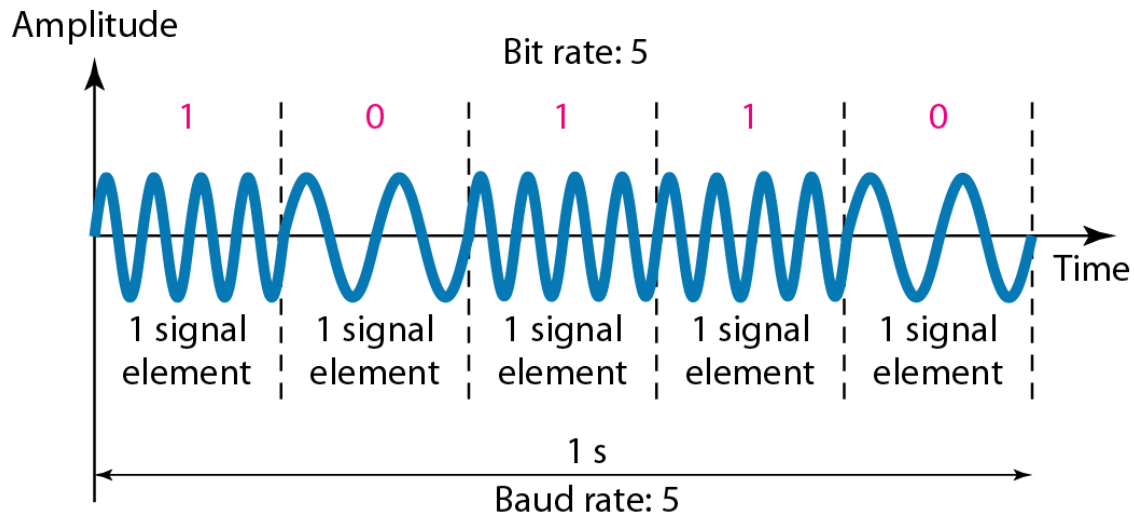
**Figure 5.2** *Types of digital-to-analog conversion*



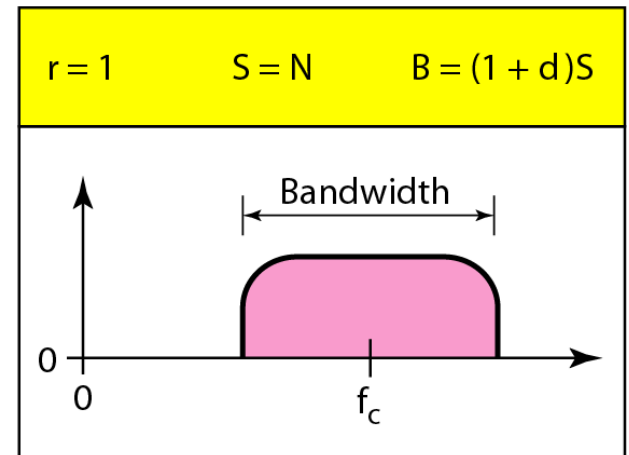
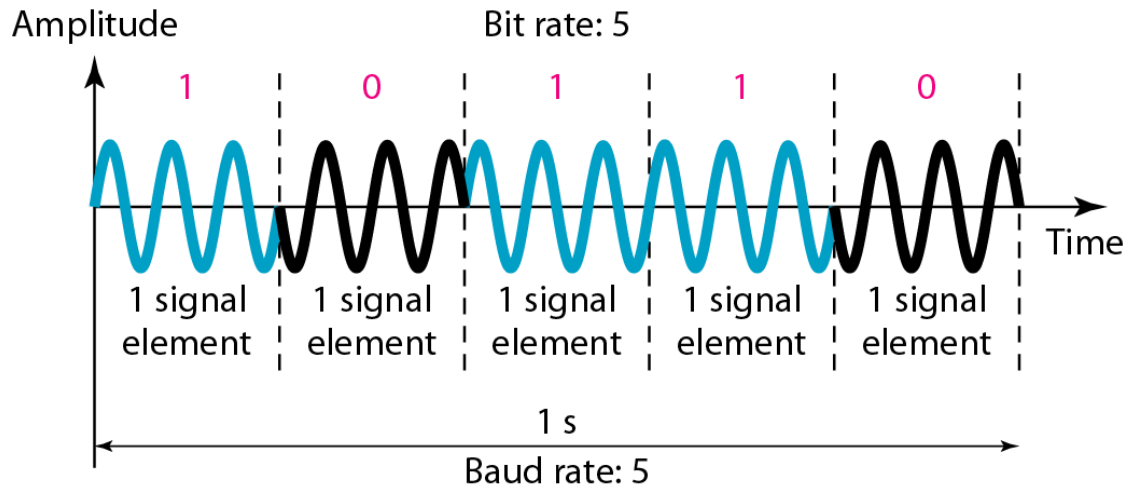
**Figure 5.3** *Binary amplitude shift keying*



**Figure 5.6** *Binary frequency shift keying*



**Figure 5.9** *Binary phase shift keying*



## 5-2 ANALOG AND DIGITAL

*Analog-to-analog conversion is the representation of analog information by an analog signal. One may ask why we need to modulate an analog signal; it is already analog. Modulation is needed if the medium is bandpass in nature or if only a bandpass channel is available to us.*

**Topics discussed in this section:**

**Amplitude Modulation**

**Frequency Modulation**

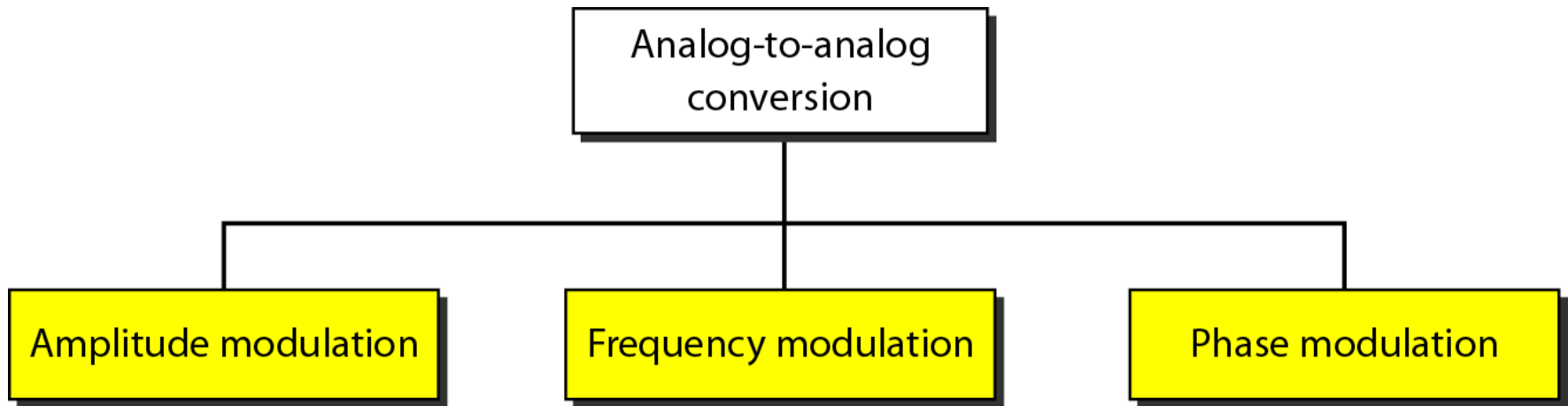
**Phase Modulation**



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

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**Figure 5.16** *Amplitude modulation*

