

Digital Communications : Fundamentals and Applications CHAPTER 1
Signals and Spectra

Figure 1.12 Impulse response of the ideal low-pass filter.

全華圖書

1 - 13

Digital Communications : Fundamentals and Applications CHAPTER 1
Signals and Spectra

Figure 1.13 RC filter and its transfer function. (a) RC filter. (b) Magnitude characteristic of the RC filter. (c) Phase characteristic of the RC filter.

全華圖書

1 - 14

Digital Communications : Fundamentals and Applications CHAPTER 1
Signals and Spectra

Figure 1.14 Butterworth filter magnitude response.

全華圖書

1 - 15

Digital Communications : Fundamentals and Applications CHAPTER 1
Signals and Spectra

Figure 1.15 Spectral characteristics of the input signal and the circuit contribute to the spectral characteristics of the output signal. (a) Case 1: Output bandwidth is constrained by input signal bandwidth. (b) Case 2: Output bandwidth is constrained by filter bandwidth.

全華圖書

1 - 16

Digital Communications : Fundamentals and Applications CHAPTER 1
Signals and Spectra

Figure 1.16 (a) Ideal pulse. (b) Magnitude spectrum of the ideal pulse.

全華圖書

1 - 17

Digital Communications : Fundamentals and Applications CHAPTER 1
Signals and Spectra

Figure 1.17 Three examples of filtering and ideal pulse. (a) Example 1: Good-fidelity output. (b) Example 2: Good-recognition output. (c) Example 3: Poor-recognition output.

全華圖書

1 - 18

**Digital Communications :
Fundamentals and Applications**

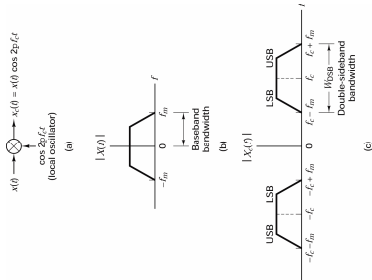


Figure 1.18 Comparison of Baseband and double-sideband spectra. (a) Heterodyning. (b) Baseband spectrum. (c) Double-sideband spectrum.

1 - 19

全華圖書

**Digital Communications :
Fundamentals and Applications**

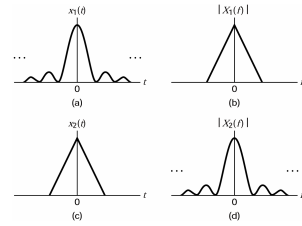


Figure 1.19 (a) Strictly bandlimited signal in the time domain. (b) In the frequency domain. (c) Strictly time limited signal in the time domain. (d) In the frequency domain.

1 - 20

全華圖書

**Digital Communications :
Fundamentals and Applications**

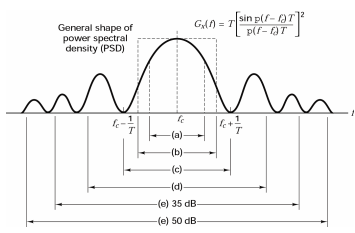


Figure 1.20 Bandwidth of digital data. (a) Half-power. (b) Noise equivalent. (c) Null to null. (d) 99% of power. (e) Bounded PSD (defines attenuation outside bandwidth) at 35 and 50 dB.

1 - 21

全華圖書

**Digital Communications :
Fundamentals and Applications**

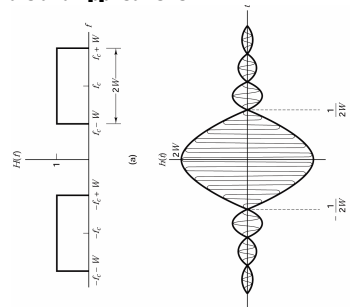


Figure 1.21 Transfer function and impulse response for a strictly bandlimited signal. (a) Ideal bandpass filter. (b) Ideal bandpass impulse response.

1 - 22

全華圖書

**Digital Communications :
Fundamentals and Applications**

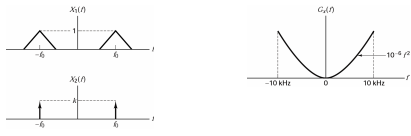


Figure P1.1

Figure P1.2

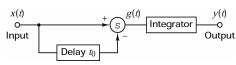


Figure P1.3

1 - 23

全華圖書