

**Digital Communications : Fundamentals and Applications** CHAPTER 3 Baseband Demodulation/Detection

Figure 3.7 Correlator and matched filter. (a) Matched filter characteristic. (b) Comparison of correlator and matched filter outputs.

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Figure 3.8 Equivalence of matched filter and correlator. (a) Matched filter. (b) Correlator.

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Figure 3.9 Dilemma in representing earliest versus latest events.

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Figure 3.10 Binary signal vectors. (a) Antipodal. (b) Orthogonal.

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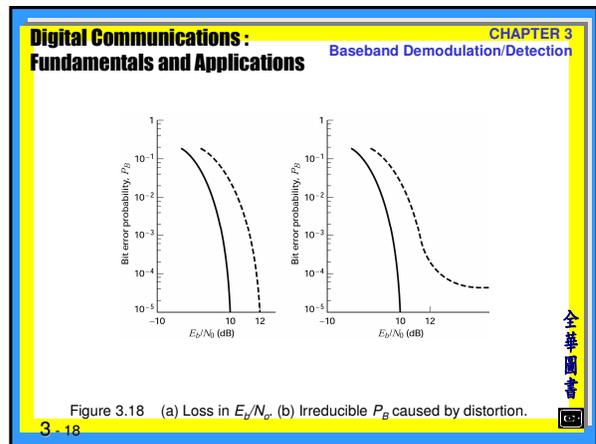
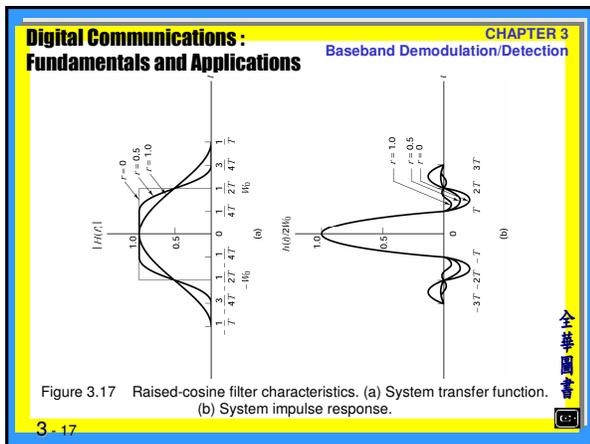
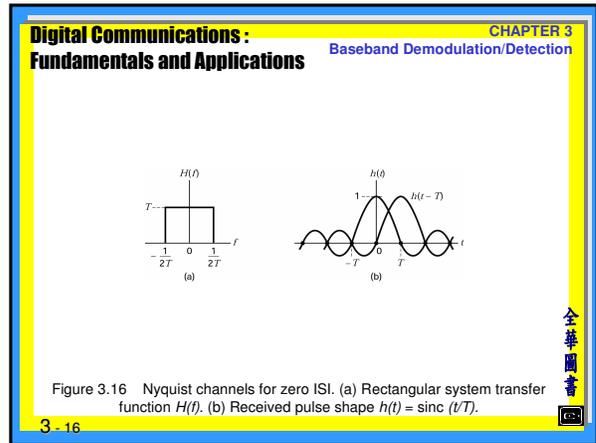
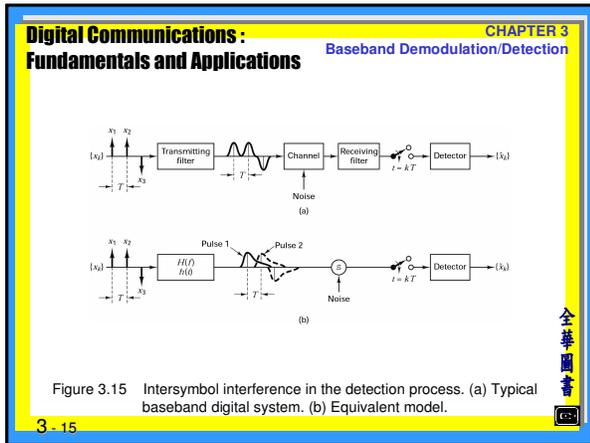
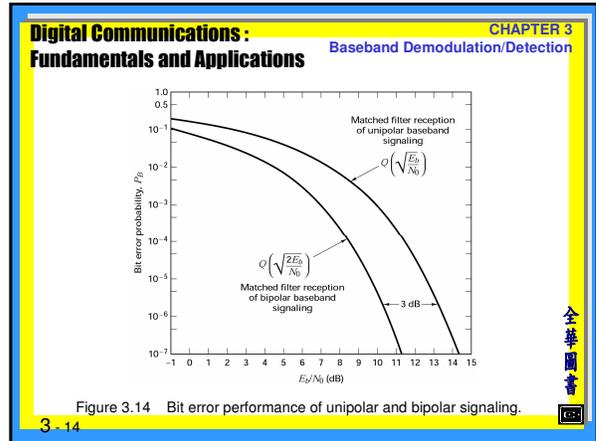
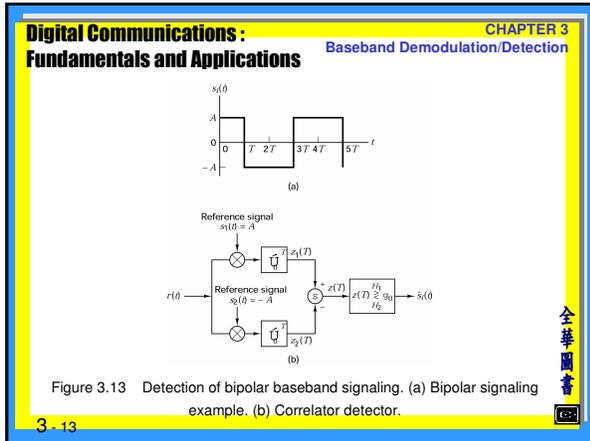
Figure 3.11 Baseband antipodal waveforms.

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Figure 3.12 Detection of unipolar baseband signaling. (a) Unipolar signaling example. (b) Correlator detector.

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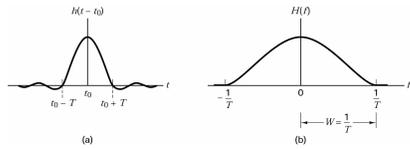


Figure 3.19 (a) Shaped pulse. (b) Baseband raised cosine spectrum.

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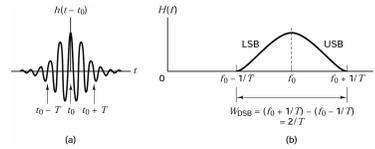


Figure 3.20 (a) Modulated shaped pulse. (b) DSB-modulated raised cosine spectrum.

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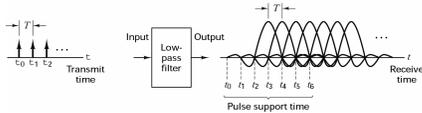


Figure 3.21 Filtered impulse sequence: output versus input.

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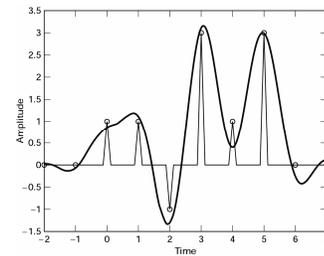


Figure 3.22a Square-root Nyquist pulse.

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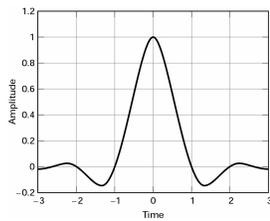


Figure 3.22b Nyquist pulse.

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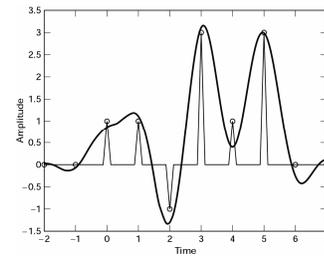


Figure 3.23a Square-root Nyquist-shaped  $M$ -ary waveform and delayed-input sample values.

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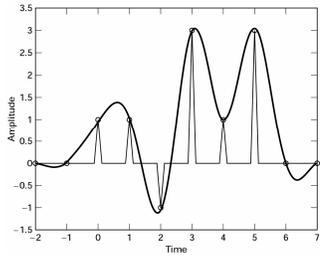


Figure 3.23b Output of raised-cosine matched filter and delayed-input sample values.

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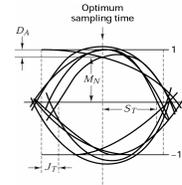


Figure 3.24 Eye Pattern.

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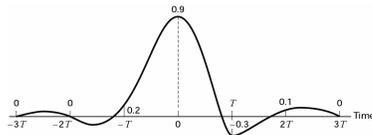


Figure 3.25 Received pulse exhibiting distortion.

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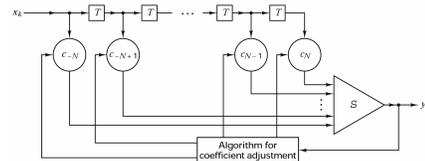


Figure 3.26 Transversal filter.

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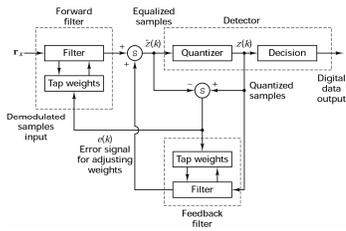


Figure 3.27 Decision Feedback Equalizer.

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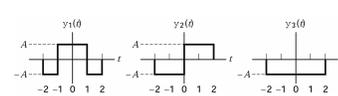


Figure P3.2

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