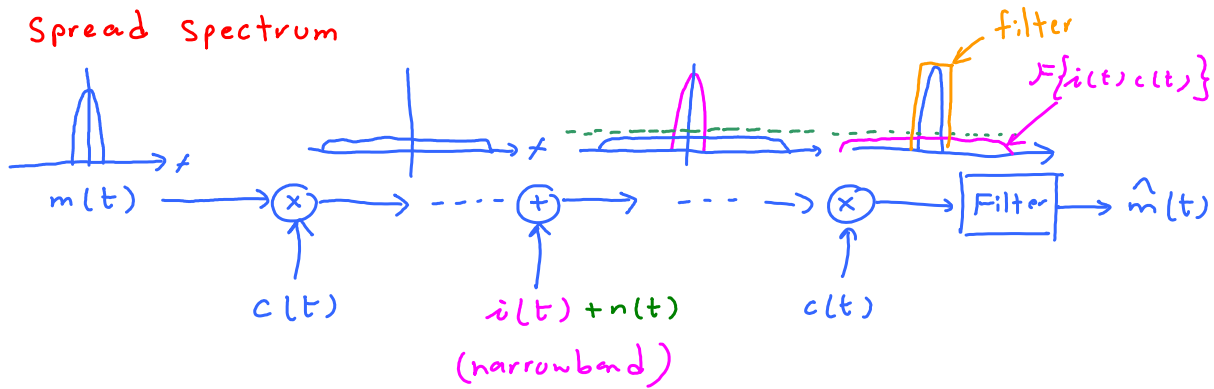


16 Spread Spectrum

Friday, January 14, 2011
10:33 AM

Lecture 16 (Jan 14)

Spread Spectrum



How can you generate $c(t)$??

spreading code

Bernoulli trials : $x_1, x_2, x_3, x_4, x_5, \dots, x_{3000,000}$

\vec{b} : $-1, 1, -1, -1, -1, 1, 1, 1, \dots$

$$\sum_{\vec{b}_3} \vec{b}_3 \cdot \vec{b}_3 = \sum (1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + \dots) = 3000,000$$

$x_1 \quad x_2 \quad \dots$

$$\sum \vec{b}_3 \cdot \vec{b}_3 = \begin{pmatrix} 1 & -1 & \dots & \dots & \dots \\ & & & & (1 \times 1, -1 \times -1) \\ \text{about } 500,000 & \text{will } \rightarrow & 1 & & \\ & & & & (-1 \times 1, 1 \times -1) \\ 500,000 & \text{will } \rightarrow & -1 & & \end{pmatrix}$$

≈ 0