

2017218007 24号 物理月17-2

8-1 解:

$$(1) B_{\text{PSK}} = 2R_b = \frac{2R_b}{\log_2 M} = \frac{2R_b}{\log_2 4} = R_b = 2400 \text{ Hz}$$

$$\eta_b = \frac{R_b}{B} = \frac{1}{2 \log_2 M} = 1 \text{ b/(s.Hz)}$$

$$(2) B = (1+\alpha)R_b = \frac{(1+\alpha)R_b}{\log_2 M} = \frac{(1+0.4) \times 2400}{\log_2 4} = 1680 \text{ (Hz)}$$

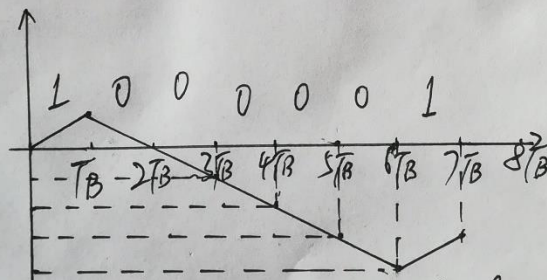
$$\text{利用率: } \eta_b = \frac{\log_2 M}{(1+\alpha)} = \frac{2}{1+0.4} = 1.43 \text{ b/(s.Hz)}$$

$$(3) B = \frac{(1+\alpha)R_b}{\log_2 M} = \frac{(1+0.4) \times 4800}{\log_2 16} = 1680 \text{ Hz}$$

$$\text{利用率: } \eta_b = \frac{\log_2 M}{1+\alpha} = \frac{4}{1+0.4} = 2.86 \text{ b/(s.Hz)}$$

8-2 解:

MSK 信号相位  
变化图:



由题设:

$$f_1 = f_c + \frac{1}{4T_B} = 3000 + \frac{1000}{40} = 3250 \text{ Hz}, f_0 = f_c - \frac{1}{4T_B} = 2750 \text{ Hz}$$

MSK:

