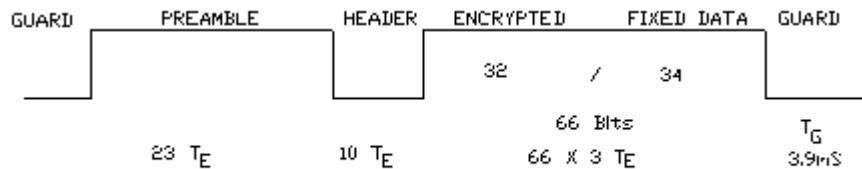


HCS 300 ENCODER MESSAGE



$$T_E = 100\mu\text{s} = 0.1 \text{ ms}$$

Data

$$TE = 3+1+10+11+4 = 29$$

Calculation is basis of worst case data content in order to maximize duty cycle On-time.

Message packet is as follows:

2.3mS preamble

1.0ms header

62 bits at data '0'

4 bits at data '1'

3.9mS guard

$$\text{Total Message packet Time } ((23 + 10 + (66 \times 3)) \times 0.1) + 3.0 = 23.1 + 3.9 = 27.0 \text{ mS}$$

$$\text{Total Message packet On Time } (23 \times 1) + ((66 \times 2) \times 0.1) = (155 \times 0.1) = 15.5 \text{ mS}$$

Therefore the duty cycle for the peak to average power conversion is:

$$\text{Duty Cycle} = \frac{15.5}{(27.0 \times 4)} = 14.3 \%$$