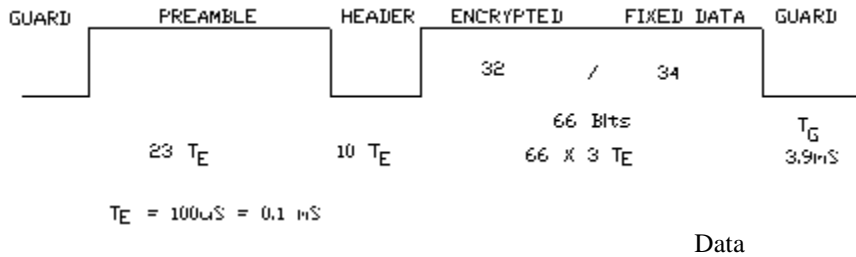


DUTY CYCLE CALCULATION

HCS 300 ENCODER MESSAGE



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

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

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

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

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

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