DUTY CYCLE CALCULATION

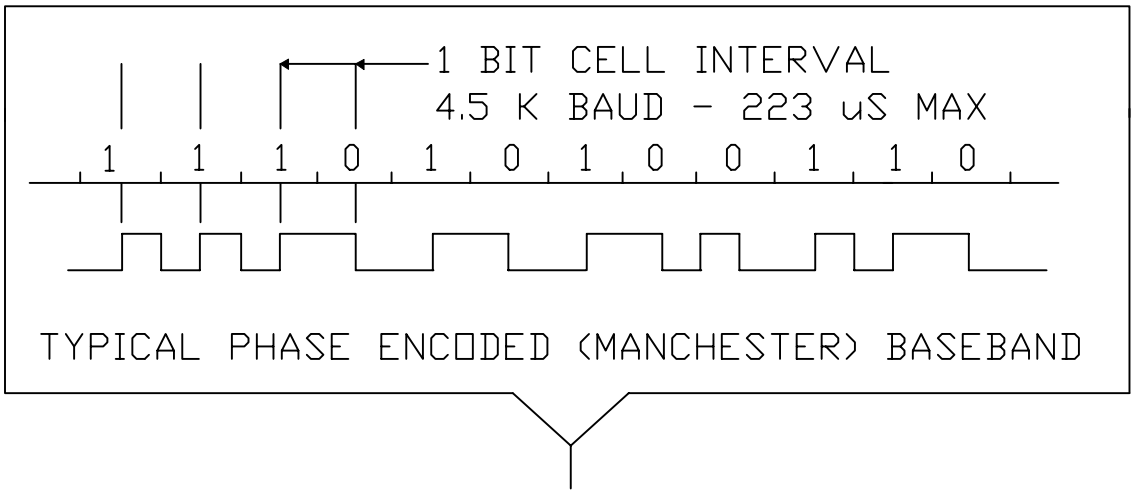
EXHIBIT 3-1 CFS8DL5839US-1

The 5839US-1 uses 4.5 K Baud Phase Encoded (Manchester) data, with a maximum bit cell interval of 223 uSec.

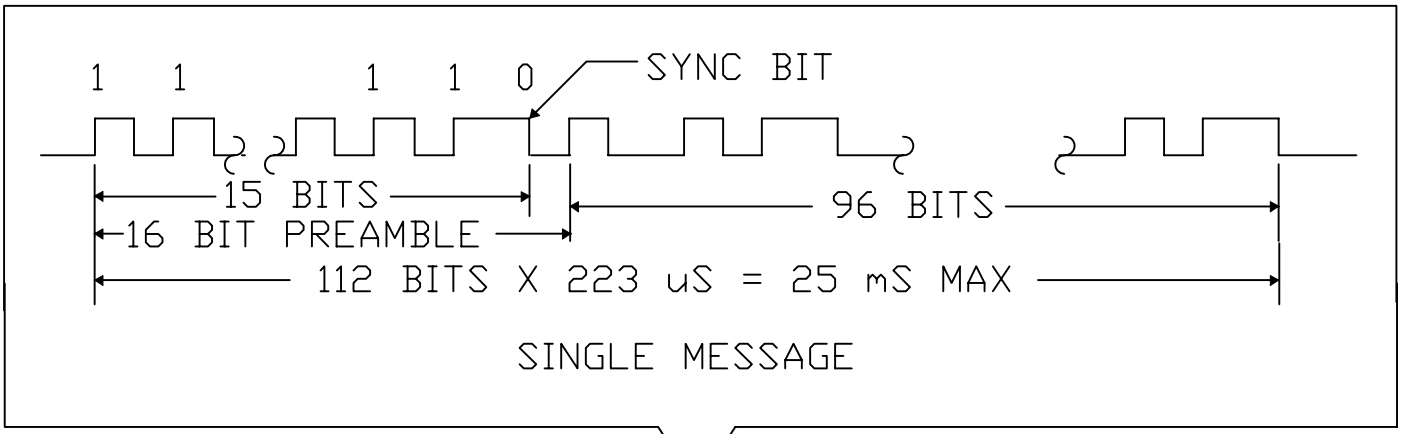
The 5839US-1 transmits a 16 bit preamble, (15 bits + one sync bit) and 96 bits of control data. For a total of 112 bits of information. the total message is 25 mSec. long.

The message is repeated five (5) times, every 120 mSec. (MIN) Therefore: the message is only sent once every 100 mSec. i.e.; 25 mSec. / 100 mSec. = .25

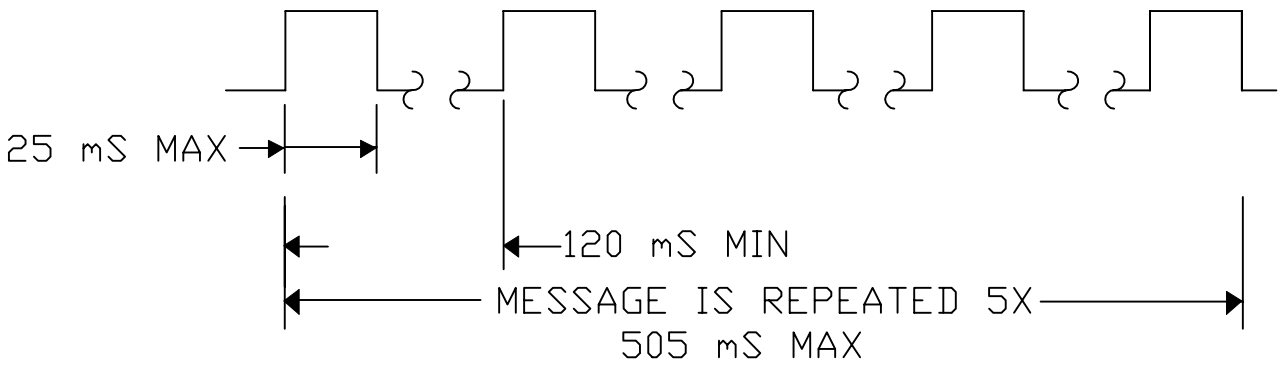
Further the Manchester has an inherent duty cycle of 50% making the total transmitter duty cycle:
.25 X .50 = .125 X 100 = 12.5 % total transmitter on time.



TYPICAL PHASE ENCODED (MANCHESTER) BASEBAND



SINGLE MESSAGE



DUTY CYCLE CALCULATION : 25 mS / 100 mS = .25 ,
THUS .25 X 50% (INHERENT IN MANCHESTER) = 12.5 % TX. DUTY CYCLE.