EXHIBIT 3-1 TIMING / DUTY CYCLE CALCULATION CFS8DL5878 / 573F-5878
Section 15.255(b)

Section 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. The exact method of calculating the average field strength shall be submitted with any application for certification.

Standard 5800 (10%) Duty Cycle Calculation

Message protocol, timing and duty cycle calculation:
The data output is phase-encoded Manchester that has inherent 50% duty cycle
and consists of 64 bits per word sent at a nominal data rate of 3.7 kb/s
(3.2kb/s min to 4.2kb/s max).
Therefore the duty cycle is calculation is as follows:
The word format consists of 64 bits,
The duration of each bit is 312.5 uSec max.
The duty cycle over a 100 mSec measuring period is calculated as follows:
Duty cycle = Actual RF transmission ON time / 100 mSec
Actual transmission ON time = 64 bits X 50% X 312.5 uSec = 10 mSec
Therefore duty cycle = 10 / 100 mSec = .10 = 10%,
and peak to average field strength is 20 db.
Total on-air time for a supervision transmission is:
64 X 312.5 uSec + (5 X 150 mSec) = 0.77 seconds
The group of six transmissions is repeated twice, with the
second group delayed from the first by a max time of 2 seconds.
The worst case on-air time is 1.54 + 2 = 3.54 seconds
Summary: - Duty cycle = 10%
On airtime = 3.54 seconds

ROLLING CODE ENCRYPTION (14.3%) - 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

Total Message packet Time ((23 + 10 + (66X3))X 0.1) + 3.0 = 23.1 + 3.9 = 27.0 mS

Total Message packet On Time (23X.1) + ((66X2) X 0.1) = (155 X 0.1) = 15.5 mS

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

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