

SECTION 2.1033(b) (2a). For Part 15 a brief description of the circuit functions of the device.

The 5806W3 is a battery powered smoke detector & alarm transmitter and is part of a wireless-alarm system. It is identical to the 5808W3 except that a temperature sensing option is not stuffed. It is used in conjunction with a receiver (5881) to indicate a possible fire event to the alarm system. All circuitry is on the same PCB. The messages are standard alarm messages transmitted at 345Mhz +/-82Khz using on-off keyed AM modulation. The 5806W3 sends a regular supervision or check-in message, no more often than once per hour.

SECTION 2.1033(b) (2a). For Part 15 a statement describing how the device operates.

The transmitters oscillator is turned on by switch Q101. Thea SAW resonator colpitts oscillator, Q102 etc.,drives a PA Q103 etc., which is on-off keyed (AM) via the modulator Q104 & Q105 etc., The RF energy is coupled out the ANT. via the tuning and coupling of C117 etc., The FDE is the SAW resonator XL101. all control signals (Ocs on/off , Mod.) come from the micro-controller IC3.

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.

5806W3 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:

$64 \times 312.5 \text{ uSec} + (5 \times 150 \text{ mSec}) = 0.77 \text{ seconds}$

The group of six transmissions is repeated twice, with the second group delayed from the first by a max time of 2 seconds.

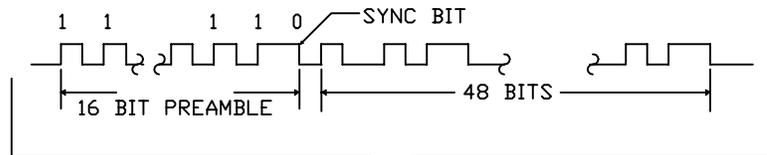
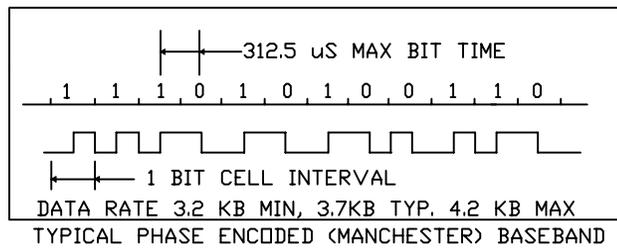
The worst case on-air time is $1.54 + 2 = 3.54 \text{ seconds}$

Summary: - Duty cycle = 10%

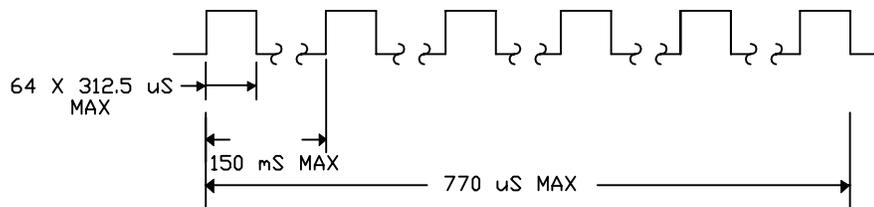
On airtime = 3.54 seconds

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SEE THE NEXT PAGE



SINGLE MESSAGE



6 IDENTICAL MESSAGES = 1 SUPERVISION MESSAGE

OR

