

March 20, 2000

Mr. Frank Coperich
Federal Communications Commission
Equipment Authorization Division
7435 Oakland Mills Road
Columbia, Maryland 21046

FCC ID: BV8MCS800A025

FCC CORRESPONDENCE REFERENCE: 12838

Dear George:

In response to your questions/comments, please note the following:

1. Carson's rule is most accurate for sinusoidal modulation or where the baseband has a clearly defined bandwidth. The baseband of the OpenSky digital signal has a gradual roll-off from DC until a null at 9600 Hz. Selecting 9600 Hz as m would calculate a bandwidth much wider than the actual FSK signal. Using the 3 dB point one obtains an m of 4800 Hz. The signal deviation (d) is 4000 Hz. Assuming $k = 1$ the following bandwidth is calculated.

Using this rule $m = 4800$, $d = 4000$, $k=1 \Rightarrow 17600$ Hz bandwidth
This bandwidth is also much wider than the actual signal.

To match the 99% bandwidth number, 11.3 kHz previously reported k can be set to 0.2125. The 99% bandwidth number was previously reported due to the fact that it seemed more applicable and appropriate to this digital waveform.

2. Understood. Future occupied bandwidth tests will be done at a narrower Resolution Bandwidth (RBW).

If my comments need further clarification or you require additional information, please do not hesitate to call me at (781) 939-4375.

Sincerely,
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