

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,  
David C. Inman  
CTS Manager  
(781) 939-4375 Phone  
(781) 935-2758 Fax  
dinman@Parker.com E-mail

FCC – MACOM3