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MAR 31 1997

Federal Communications Commission
Office of Secretary

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), GN Docket No. 96-228*

Dear Mr. Caton:

Enclosed please find an original and two copies of a Statement by Melvin Barmat, for inclusion in the above-referenced docket. The Statement reflects the substance of conversations that Mr. Barmat had with David Siddall (Office of Commissioner Ness) and Steve Sharkey (International Bureau). I also had a conversation with David Siddall, the substance of which was to summarize Mr. Barmat's findings.

Please call if you have any questions.

Respectfully submitted,



Diane S. Hinson
Counsel for Digital Satellite Broadcasting Corporation

Enclosures

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STATEMENT OF MELVIN BARMAT

This statement is in regard to the Petition for Expedited Reconsideration of the DigiVox Corporation concerning WCS Out-of-Band (OOB) Emission Limits.

1. The recent analysis by the Commission's Staff on this subject correctly does not include any reduction in interference effects due to head blockage or pulsed operation of PACS transmitters.
2. This staff analysis does propose a changed PACS OOB limit --- based on four (4) factors plus a general consideration of the probability of the occurrence of harmful interference from PACS transmitters to SDARS receivers.
3. The four factors are:
 - a) A 12 foot separation between PACS and SDARS receiver antennas --- instead of 6 feet.
 - b) A doubling in the assumed noise temperature of the SDARS receiver from 125°K to 250°K.
 - c) Allowing interference to cause the effective noise temperature of the SDARS receivers to increase by 1 dB, or to the equivalent of 320°K for Primosphere -- or a 26% increase over the 250°K or 250% over 125°K.
 - d) Assuming a 9 dB difference between the gain of Primosphere's antenna for reception of the desired signal (from the satellite) compared to the undesired signal (from the OOB emission). This 9 dB differential is based on two factors, i.e., a 6 dB difference for directivity and 3 dB for polarization isolation due to the vertical linear polarization of the PACS transmitter. For Primosphere, the directivity difference means the circularly polarized gain of

its antenna in the direction of the OOB emissions is -3 dB. Adding the 3 dB for polarization isolation yields a net gain of -6 dB for the Primosphere antenna in the direction of the PACS OOB emissions that was used by the Staff in its calculations.

4. While I do not agree with any of the four changes in assumptions, it is recognized that reasonable people can disagree on the exact values for the first three factors, i.e., 12 foot separation, assumed noise floor and allowance for interference. Although there is not agreement with the values selected, at this time it does not appear fruitful to continue to debate the specific numbers chosen by the Staff for these three factors.

5. However, the basis for the assumptions of the fourth factor are factually incorrect for both directivity and polarization. There is not disagreement with the 6 dB difference between the gain in the desired and undesired directions. However, the Staff used the +3 dB desired gain of the Primosphere antenna and subtracted 6 dB to obtain a gain of -3 dB in the direction of the OOB emission for all DARS systems. But the DSBC antenna gain in the desired direction will be at least 5 dB --- thus when 6 dB is subtracted, the directivity gain of the DSBC antenna towards the OOB emission is -1 dB, in contrast to the -3 dB used by the Commission Staff in its calculations.

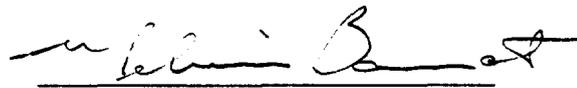
In the case of the polarization isolation assumption, DSBC has presented information¹ that for antennas of the type to be used in DSBC's mobile SDARS receivers, the circularity of the polarization virtually disappears at the low elevation angles from which the PACS OOB emissions will come. Thus, the 3 dB of isolation for the vertical

¹ Based on antenna supplier's data and confirmed by DOD (Naval Air Weapons Center) testing.

linear polarization of the PACS mobile antennas used by the Staff is incorrect and should be changed to 0 or 1 dB.

6. In sum, the overall DSBC SDARS antenna gain in the direction of the PACS OOB emission should be -2 dB rather than the -6 dB used by the Staff. This would require the WCS/PACS OOB to be -97 dBW/MHz. Because of recent information, DSBC now believes the noise temperature of its receivers will be approximately 190°K, rather than the 250°K assumed by the Staff. This means that the -97 dBW/MHz limit proposed above for OOB emissions from PACS receivers will raise the noise floor of DSBC's SDARS receivers by 1.4 dB, rather than the 1 dB assumed by the Staff. In the interest of moving the process along, at this time it seems unwise to continue the discussions for a difference of 0.4 dB if the Commission adopts a WCS/PAC OOB limit of -97 dBW/MHz.

March 31, 1997


Melvin Barbat

CERTIFICATE OF SERVICE

I, Amy Bertelsen, do hereby certify that the foregoing **EX PARTE LETTER** was hand delivered on this 31st day of March, 1997 to the following:

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