

THE TELOS ALLIANCE™

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

July 19, 2011

Dear Ms. Dortch:

The FM-Stereo transmission system utilized in conventional analog FM broadcasting has been in place since 1961. This year, we celebrate 50 years of FM-Stereo in the marketplace! In that time, technological advances have occurred which can improve the FM-Stereo service, and do so in a manner that is backwards compatible to existing receivers, yet offer tangible benefit to radio listeners. In order to do so, we will need to perform in-field testing, as the method described herein pertains to FCC rule § 73.322, with respect to stereo transmission.

This letter outlines a method, as an option to the present double sideband suppressed carrier (DSBSC) system, utilizing single sideband suppressed carrier (SSBSC) modulation of the stereophonic subcarrier in the FM multiplex baseband signal. A detailed description of this concept can be found in a white paper, authored by the undersigned, and available on website: <http://www.omniaaudio.com/downloads/white-papers/MPX-SSB-White-Paper.pdf>

The intended goal of this effort is to reduce perceived multipath of the FM channel through a reduction of occupied bandwidth and sideband pairs of the modulated carrier. There are multiple benefits for the broadcast signal, which I feel will be perceivable to the listener: A reduction in multipath induced distortion, additional protection to the spectrum used for RDS, SCA signals, and HD-Radio content - thereby improving data robustness in the receiver.

Additionally, should this method become adopted, there is potential for an improvement of up to 4dB in signal-to-noise performance of a stereo receiver, if a receiver were designed to only recognize the 38kHz SSBSC signal. Informal discussion has occurred among manufacturers about the creation of a *smart* FM receiver that could automatically decode either the method of FM-Stereo transmission.

To date, I have tested the SSBSC method in our engineering lab and found it to be compatible with existing FM radio receivers. Likewise, the system does not exhibit any degradation to the FM modulated carrier, as peak modulation remains exactly the same, as well as the performance of stereo separation, and frequency response. If anything, the occupied bandwidth of the FM channel is reduced a bit due to the increased modulation index. This results from the SSBSC method utilizing only 38kHz of spectrum (20Hz – 38kHz) as compared to the 53kHz (20Hz – 53kHz) spectrum required with the DSBSC method.

The National Radio Systems Committee has convened one of their sub-groups to look into the method further. The next step for broadcasters is to begin testing in the field, and this is also another reason for this letter. I understand broadcasters will need to request an experimental authority (EA) under FCC rule



§ 73.1510. As such, I wish to enlighten you with the background of this method, and hope that it will be possible for the broadcasters and our company to continue our work on this exciting concept.

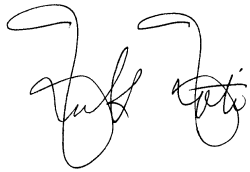
At this time, we have mapped out a plan that would enable in-field testing to determine if the SSBSC method does reduce the perceptible effect of multipath. We wish to confirm the results acquired in lab testing. Aside from that, we intend to observe occupied bandwidth, as well as testing to see if there is any change in adjacent channel performance. Omnia will over see the in-field testing and will provide a report of its findings.

Upon completion of testing, should the consensus of the NRSC group support the concept, then we would embark upon the proper procedures with regards to where we proceed next.

Our company, Omnia Audio, has researched, designed, and implemented a SSBSC option for the stereo generator function employed in our Omnia.11 FM audio processor. Thus, activation of the technology is readily available for implementation.

Should you desire any additional information about this, please do not hesitate to contact the undersigned.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Frank Foti', written in a cursive style.

Frank Foti
President, Omnia Audio