

To: Thomas Nessinger  
Subject: RE: FCC 18-139A1 / MB Docket No. 13-249 - Need Clarification

-----Original Message-----

From: Thomas Nessinger [mailto:Thomas.Nessinger@fcc.gov]  
Sent: Thursday, October 11, 2018 8:01 AM  
To: bhenry@saber.net  
Subject: RE: FCC 18-139A1 / MB Docket No. 13-249 - Need Clarification

Mr. Henry,

This information is better raised in comments to the Second FNPRM. We have not yet published the summary in the Federal Register but hope that will be done within the next couple of weeks. The comment deadline will be 60 days after Federal Register publication, so there will be time to submit them.

Moreover, discussing this with me individually constitutes an ex parte communication. This is not a problem as the rulemaking is "permit but disclose," but you will need to file this submission for the record and disclose the fact that you've sent it to me. You can file this in ECFS under Docket 13-249. See Section 1.1206(b)(2) (47 CFR Section 1.1206(b)(2)). We will then consider it in the course of reviewing all the comments.

Thomas S. Nessinger  
Senior Counsel  
Audio Division, Media Bureau  
Federal Communications Commission

-----Original Message-----

From: Brian J. Henry [mailto:bhenry@saber.net]  
Sent: Thursday, October 11, 2018 10:22 AM  
To: Thomas Nessinger <Thomas.Nessinger@fcc.gov>  
Cc: bhenry@saber.net  
Subject: RE: FCC 18-139A1 / MB Docket No. 13-249 - Need Clarification

Good morning again Mr. Nessinger,

Thank you for your considerate prompt reply.

The reason that I inquired about the Class B, C, and D of Section 73.37 of the FCC's rules is that The Commission's proposal is such a radical departure from the work that was done by the FCC and the NRSC during the early 1990's AM Improvement Proceeding that I feel that there must have been an oversight.

Let me try to explain my perspective without bringing the Class A situation into the equation.

Under the current Section 73.37 for daytime operation:

Co-channel separation is 0.025 mV/m to 0.5 mV/m. This is a D/U ratio of 26 dB at the 0.5 mV/m contour.  
First adjacent channel separation is 0.25 mV/m to 0.5 mV/m. This is a D/U ratio of 6 dB at the 0.5 mV/m contour.  
Second adjacent channel separation is 5 mV/m to 5 mV/m. This is a D/U ratio of 0 dB at the 5 mV/m contour.  
Third adjacent channel separation is 25 mV/m to 25 mV/m. This is a D/U ratio of 0 dB at the 25 mV/m contour.

Under the proposed Section 73.37 for daytime operation:

Co-channel separation is 0.1 mV/m to 2 mV/m. This is a D/U ratio of 26 dB at the 2 mV/m contour.

First adjacent channel separation is 2 mV/m to 2 mV/m. This is a D/U ratio of 0 dB at the 2 mV/m contour.

Second adjacent channel separation is 25 mV/m to 25 mV/m. This is a D/U ratio of 0 dB at the 25 mV/m contour.

Now, let's look at the signal to noise ratios to a co-channel and first adjacent channel interferer using both the 0-5 kHz and the 5-10 kHz ranges for the two allocation schemes (current and proposed) that also correlates with audio signal to noise ratio.

The current Section of 73.37 signal to noise ratio for the desired station during daytime operation works out as follows:

At the 0.5 mV/m contour, the 0-5 kHz signal to noise ratio is 26 dB. (reference level) (barely useable)

At the 0.5 mV/m contour, the 5-10 kHz signal to noise ratio is 6 dB. (reference level) (unusable)

At the 2 mV/m contour, the 0-5 kHz signal to noise ratio is 50 dB.

(The interferer drops by 12 dB and the desired increases by 12 dB = +24 dB) (pretty good)

At the 2 mV/m contour, the 5-10 kHz signal to noise ratio is 30 dB.

(The interferer drops by 12 dB and the desired increases by 12 dB = +24 dB) (poor)

At the 5 mV/m contour, the 0-5 kHz signal to noise ratio is 66 dB.

(The interferer drops by an additional 8 dB and the desired increases by an additional 8 dB = +16 dB) (good)

At the 5 mV/m contour, the 5-10 kHz signal to noise ratio is 46 dB.

(The interferer drops by an additional 8 dB and the desired increases by an additional 8 dB = +16 dB) (acceptable)

At the 25 mV/m contour, the 0-5 kHz signal to noise ratio is 94 dB.

(The interferer drops by an additional 14 dB and the desired increases by an additional 14 dB = +28 dB) (excellent)

At the 25 mV/m contour, the 5-10 kHz signal to noise ratio is 74 dB.

(The interferer drops by an additional 14 dB and the desired increase by an additional 14 dB = +28 dB) (excellent)

This tabulation suggests why the 25 mV/m contour had previously been considered the "City Grade" contour. A 25 mV/m signal provides an excellent signal to noise ratio under ideal listening conditions with the current allocation scheme.

The proposed Section 73.37 signal to noise ratio for the desired station during daytime operation works out as follows:

At the 0.5 mV/m contour, the 0-5 kHz signal to noise ratio is only 2 dB. (unusable)

At the 0.5 mV/m contour, the 5-10 kHz signal to noise ratio is less than 0 dB. (unusable)

At the 2 mV/m contour, the 0-5 kHz signal to noise ratio is 26 dB. (reference level) (barely useable)

At the 2 mV/m contour, the 5-10 kHz signal to noise ratio is 0 dB. (reference level) (unusable)

At the 5 mV/m contour, the 0-5 kHz signal to noise ratio is 42 dB.

(The interferer drops by 8 dB and the desired increases by 8 dB = +16 dB) (poor)

At the 5 mV/m contour, the 5-10 kHz signal to noise ratio is 16 dB.

(The interferer drops by 8 dB and the desired increases by 8 dB = +16 dB) (terrible)

At the 25 mV/m contour, the 0-5 kHz signal to noise ratio is 70 dB.

(The interferer drops by 14 dB and the desired increases by 14 dB = +28 dB) (good)

At the 25 mV/m contour, the 5-10 kHz signal to noise ratio is 44 dB.

(The interferer drops by 14 dB and the desired increases by 14 dB = +28 dB) (acceptable)

At the 100 mV/m contour, the 0-5 kHz signal to noise ratio is 94 dB.

(The interferer drops by 12 dB and the desired increases by 12 dB = +24 dB) (excellent)

At the 100 mV/m contour, the 5-10 kHz signal to noise ratio is 68 dB.  
(The interferer drops by 12 dB and the desired increases by 12 dB = +24 dB) (very good)

The proposed changes to Section 73.37 provide a relatively poor signal to noise ratio at the 5 mV/m "city grade" contour. It isn't until you reach the 25 mV/m contour that the signal to noise ratio becomes roughly equivalent to what the Section 73.37 currently provides at the 5 mV/m "city grade" contour.

Assuming uniform ground conductivity in a given area, I believe that my simple methodology provides a reasonably accurate analysis of the impact that the proposed changes to Section 73.37 could have.

To sum the proposed changes up:

Co-channel interference at a given signal contour may increase by as much as 24 dB.  
First adjacent channel interference at a given signal contour may increase by as much as 30 dB.  
Second adjacent channel interference at a given signal contour may increase by as much as 28 dB.  
Third adjacent channel interference at a given signal contour may increase by an infinite amount.

To further exemplify the magnitude that the proposed changes may represent, let's say one station increases its output power and/or changes its pattern shaping such that its 0.5 mV/m first adjacent signal contour becomes the 2 mV/m contour and then places that 2 mV/m contour up against another station's 2 mV/m contour. For the second station to restore the status quo, it would have to increase its output power by 30 dB. For a 1 kW AM station, this would require an output power increase to 1 MW.

I feel doubtful that the Commission staff had this sort of increase in station to station interference in mind when these changes were conceived. It seems to me that the increased interference potential along with the corresponding reduction in a given station's service area that may result from it could have a detrimental impact on the AM broadcast service as we know it should the changes to Class B, C and D stations' daytime protected signal contours specified in Section 73.37 be implemented as proposed. It is because it is such a significant departure from all of the work that the FCC has done previously with respect to AM broadcast allocations that I feel that there must have been an oversight. I can't otherwise understand why the Commission would propose to degrade Class B, C and D daytime protections by such a large, consequential and unprecedented extent. The current protections are there for a reason. Changing or deleting them haphazardly wouldn't be sensible.

If the Commission simply wants to change the protected contour from 0.5 mV/m to 2 mV/m, then the D/U ratio at the new contour would need to be adjusted as well so that everything correlates to the current protections. It is worth noting that the design of every AM broadcast receiver ever made is based on the codified allocation scheme or a slight variation of it. The existing installed receiver base is the most valuable asset that the AM broadcast industry has and needs to be given due consideration because of it.

A co-channel D/U ratio of 50 dB and a first adjacent D/U ratio of 30 dB at the 2 mV/m contour correlates to D/U ratios of 26 dB and 6 dB respectively at the 0.5 mV/m contour that is being used currently in Section 73.37.

I am not sure if it would be appropriate, but I would welcome the opportunity to discuss my analysis in greater detail with the Commission staff.

Thank you for your consideration. I hope that I have been helpful. I have given a lot of careful thought to this.

Sincerely,

Brian Henry  
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-----Original Message-----

From: Thomas Nessinger [mailto:Thomas.Nessinger@fcc.gov]

Sent: Wednesday, October 10, 2018 12:14 PM

To: bhenry@saber.net

Subject: RE: FCC 18-139A1 / MB Docket No. 13-249 - Need Clarification

We did propose to revise the rules for Class B, C, and D protection in the Further Notice of Proposed Rule Making in this proceeding, FCC 15-142, and those original proposals are preserved in the Second FNPRM. They are, however, different from the current Section 73.37.

To the extent that the table in the proposed Section 73.37 in the Second FNPRM differs from the one in the FNPRM, this is because we revised our original proposal for protecting Class A stations. So the table will be different when it comes to Class B, C, and D stations vis-à-vis Class A stations. You will see that the figures are the same for Class B, C, and D stations vis-à-vis all other classes (i.e., non-Class A) of station.

Thomas S. Nessinger  
Senior Counsel  
Audio Division, Media Bureau  
Federal Communications Commission

-----Original Message-----

From: Brian J. Henry [mailto:bhenry@saber.net]

Sent: Wednesday, October 10, 2018 9:45 AM

To: Thomas Nessinger <Thomas.Nessinger@fcc.gov>

Cc: bhenry@saber.net

Subject: FCC 18-139A1 / MB Docket No. 13-249 - Need Clarification

Good morning Mr. Nessinger,

I am hoping that you can provide me with some clarification to the Commission's recently released Second Further Notice Of Proposed Rulemaking in the AM Revitalization Proceeding.

In Section B, paragraph 16, of the Second Notice of Proposed Rulemaking, with respect to revising daytime protection ratios for Class B, C, and D AM stations, the Commission states, "We are not revising these proposals at this time." However, in Appendix A, Proposed Rule Changes, Section 73.37, the daytime protection ratios for Class B, C, and D stations are shown having been revised which is confusing.

Would it be possible for you to elaborate on this for me?

Sincerely,

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