



Comments Filed on Request for FM Digital Power Increase

Comments were filed on December 5 responding to the FCC's Public Notice on the proposed FM IBOC digital power increase (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-08-2340A1.pdf). This proposal was made in June 2008 by a group consisting of 18 broadcasters and the 4 largest manufacturers of broadcast transmission equipment (identifying themselves as "Joint Parties"). Specifically, the Joint Parties requested that the Commission increase the maximum permissible digital operating power of FM stations from the current level of 1 percent of a station's authorized analog power (-20 dBc, referenced to the unmodulated analog FM carrier power) to a maximum of 10 percent of a station's authorized analog power (-10 dBc). The results of technical studies conducted by iBiquity Digital and CBS Radio in support of this proposal were submitted to the Commission, as well.

NAB's comments noted that the benefits of permitting FM broadcasters to optionally increase the power in their digital signal (which include increased digital coverage and penetration of IBOC signals into buildings) are compelling, and that the iBiquity and CBS Radio studies are sound and provide a sufficient and strong basis for the FCC to authorize the proposal of the Joint Parties. Included with NAB's filing is an engineering study, conducted for NAB by the broadcast consulting engineering firm of Hammett & Edison (H&E, San Francisco, CA, www.h-e.com). In addition to reviewing the iBiquity study, H&E conducted a detailed computer analysis of the impact of the proposed power increase on digital coverage and 1st-adjacent channel analog interference nationwide. Their analysis generally confirms the conclusions of the iBiquity report and offers additional insight into the impact of the proposed power increase.

H&E conclude that a 10 dB power increase would improve digital population coverage within stations' protected contours by a significant amount. A summary of their analysis is presented in the tables which detail both the estimated digital coverage improvement and 1st-adjacent channel interference increase (to analog FM signals), within a station's protected contour, if all stations in the U.S. were broadcasting digitally at the higher (-10dBc) level. These increases are expressed as a percentage of the listener populations within a station's protected contour based upon existing IBOC transmission levels of -20 dBc. Note that, since the study limits its area of consideration to within a station's protected contour, those stations that already cover their contour would be listed as having 0% coverage improvement. The 10 dB power increase would however, result in more coverage outside the contour, more reliable service within the contour and better reception indoors.

PROJECTED IBOC DIGITAL COVERAGE IMPROVEMENT WITHIN THE PROTECTED CONTOUR			
INCREASE IN POPULATION RECEIVING SERVICE	NO. OF STATIONS	PERCENT OF TOTAL STATIONS	
no increase	737	8.3%	
0-1%	946	10.7	
1-2	682	7.7	
2-3	531	6.0	
3-4	464	5.2	
4-5	358	4.0	(1% increments)
5-10	1,560	17.7	(5% increments)
10-15	1,005	11.3	
15-20	660	7.5	
20-25	511	5.8	
25-30	346	3.9	
30-35	280	3.2	
35-40	206	2.3	
40-50	266	3.0	
more than 50	301	3.4	
TOTALS	8,853	100.0	

PROJECTED INTERFERENCE INCREASE TO 1ST-ADJ ANALOG STATIONS WITHIN THE PROTECTED CONTOUR			
INCREASE IN POPULATION RECEIVING INTERF.	NO. OF STATIONS	PERCENT OF TOTAL STATIONS	
no increase	2,088	23.6	
0-1%	1,305	14.7	
1-2	744	8.4	
2-3	534	6.0	
3-4	476	5.4	
4-5	389	4.4	(1% increments)
5-10	1,304	14.7	(5% increments)
10-15	664	7.5	
15-20	414	4.7	
20-25	292	3.3	
25-30	184	2.1	
30-35	131	1.5	
35-40	101	1.1	
40-50	127	1.4	
more than 50	100	1.2	
TOTALS	8,853	100.0	

In practice, the potential interference would actually be much lower than the Hammett & Edison results suggest. This is because the Hammett & Edison analysis assumes that all FM stations are broadcasting digitally, whereas presently only 12% of FM stations are on air in digital. Further, it assumes that all stations are operating with the maximum proposed power increase of 10 dB, and it is very unlikely, for a variety of reasons, that this would ever be the case.

The Joint Parties' comments, filed on behalf of over 1,200 broadcast stations (as well as the four largest broadcast manufacturers) first note that their power increase request is based on extensive real-world studies conducted by several broadcasters and iBiquity Digital. They further note that the iBiquity study found, in the majority of instances, listeners to 1st-adjacent analog stations did not hear meaningful impact from the increase in digital power, and that although the test program was conducted over a significant period of time, not one interference complaint was received by any of the test stations, or, to the Joint Parties' knowledge, were any complaints filed with the FCC. Thus, the test program indicates that the power increase may, at most, have a tolerable potential for interference in limited first adjacent analog situations.

Regarding the NPR Labs digital interference study (which was also a subject of the FCC's Public Notice), the Joint Parties observe that the NPR work is based on multiple laboratory assumptions and predictions, with no real-world test component involving stations operating at elevated digital levels. Moreover, while the real-world studies associated with the Joint Parties' request were designed to calculate and evaluate the impact that a discretionary digital FM power increase would actually have on analog and digital listeners (so that the Commission would have a substantive basis for acting on the HD Power Increase Request), the NPR Study is premised on a "worst case" scenario which "assumes that all existing stations affecting the subject facility have increased their IBOC power by a full 10%." The Joint Commenters believe that by adopting a worst case scenario, the NPR Study produced an unrealistic prediction of the impact that the requested digital power increase would have on analog operations.

Ford Motor Company and BMW also filed comments supporting the proposed power increase. Both automakers expressed their concern that the benefits of HD Radio technology will not be accepted by the public unless HD Radio technology is able to replicate analog coverage in a greater number of cases, and note that these coverage problems are particularly problematic in a car environment. They note that mobile reception is inherently more susceptible to multipath interference and other impairments that can vary considerable in very short time frames as a car drives into and out of areas of interference. Both Ford and BMW believe the tests iBiquity Digital conducted demonstrate a 10 dB power increase will deliver a more complete replication of digital coverage in a variety of terrain environments.

The full text of all comments may be obtained using the FCC's Electronic Comment Filing System (ECFS) at www.fcc.gov/cgb/ecfs/. Select the "Search for Filed Comments" link on the right side of this Web page, then enter "99-325" (no quotes) in box #1 and click on the "Retrieve Document List" button at the bottom of the page. Broadcasters interested in filing replies in this matter (due January 12, 2009) may do so electronically by accessing the ECFS. Filers should follow the instructions provided on the Web site for submitting comments, and should include their full name, U.S. Postal service mailing address, and the applicable docket number: MM Docket No. 99-325. Parties may also submit an electronic comment by email—to get filing instructions, send an e-mail to ecfs@fcc.gov, and include the words "get form" in the body of the message. A sample form and instructions will be sent in response.

Another Radio Receiver for the Holidays...

A number of exciting radio-based consumer products were featured in the [December 8, 2008 issue](#) of Radio TechCheck. Here's another new product that would make a great holiday gift:

Broadcast Traffic Consortium-enabled navigation – brought to you by the efforts of the Broadcaster Traffic Consortium (BTC) and Navteq is the new Garmin Nuvi 265T Portable Automotive GPS with free lifetime traffic. All Garmin units that end in "T" provide ad-supported lifetime traffic. The Nuvi 265T unit can be purchased from Walmart for \$240 and is available on Walmart's web site at



www.walmart.com/catalog/product.do?product_id=10543584&sourceid=18453967783684869578.

View Real-time traffic and a vibrant 4.3" color, touch screen display with Garmin's Nuvi. This mapping device has the entire US, Canada and Puerto Rico pre-loaded in to the unit along with up 6 million points of interest. The free traffic service, provided by Navteq, uses the Nuvi 265WT or 755T's integrated traffic receiver for up to the minute alerts about traffic delays or road construction that lie ahead on your route. The Garmin 265T can then prompt you to route around these delays to save you valuable time and fuel.

