

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of)
)
FM Digital Power Increase) MM Docket No. 99-325
and)
Associated Technical Studies) DA No. 09-1127

Reply Comments to

the "Joint Parties" Request that the Commission Increase the
Maximum Permissible Digital Operating Power of FM Stations
A full Six to Ten times without Direct Commission Oversight
and Close Supervision.

by

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Introduction, Personal and Professional

AS BEFORE, in prior comments, The Educational Information Corporation is a non-profit corporation located in North Carolina and only engages in not-for-profit educational endeavors. The Corporation's stations do not presently broadcast digital signals, nor hold any stock or position in any company or entity that would stand to profit from the acceptance or rejection of any digital broadcasting methodology. If a digital broadcasting format is adopted by the public, the Corporation would be happy to embrace it, but this has not yet happened. The Corporation is the Licensee of WCPE, Raleigh, NC; WZPE, Bath, NC; and several translators in North Carolina and Virginia.

AS BEFORE, I am Deborah S. Proctor, General Manager and Technical Director of the Corporation, and the author of this comment. (See immediately prior Comment for additional references).

Summary, Concerning this Proceeding

I believe that this proceeding is premature and rushed, and now I will add unsupervised and another bad attempt to shirk the FCC's regulatory responsibilities and "leave complex technical decisions up to the market". Has not the past taught us that this isn't such a good idea? Let us recall "analog AM stereo", "C-Quam", "FM-Extra", "FM-Quad" and a few other debacles where the FCC did not take a role and left things up to the marketplace. They all failed and cost broadcasters and manufacturers and the public millions, if not billions of dollars.

The Commission is duty-bound by the Act to oversee new technology and make its best decision based upon public interest criteria. The fact that some manufactures and broadcasters spent a lot of money on a process would not have happened in the first place if the FCC took its responsibility seriously as it did with FM stereo and made sure the technical plans were workable, non-interfering, of reasonable cost to the public and the broadcaster, and would work as well or better than anticipated. This comment period and the varied and wide-spanning comments give do not show such is the case.

A Snapshot of the Month's Earlier Comments

One group (mostly individuals) says "I bought a digital radio and it doesn't work well; I thought it would be as good as my 3G devices". It is a disappointment.

Another group says "We put a whole lot of money into developing digital radio and we say now, after beforehand saying it would work, after beforehand saying there would be some problems in the transition period, must now come and say "we were wrong and we need four to ten times more power to get our scheme to work. But our tests show that everything can be wonderful if we just have a couple of a couple times more power and there will be no harmful interference, WE PROMISE.

Others say tests they read about were "magical" at best and some suspect they were outright "move it a little the other way" at worst. Whatever you believe, where was the independent

oversight? Why don't other tests concur in their results? Why would the physics change depending on the tester?

Another group believed those promises, bought billions of dollars of equipment and promise with government money, and is now finding out that not only is the product not working as promised, but they are finding (literally) evidence of hundreds of thousands of cases of interference into their own analog services and saying "wait, we need to test more, we are finding out bad things about this system".

Another group says "we want to sell a lot of new transmitters and antennas".

A final group said before "we bought a lot of these radios and they're sitting in our unsold cars and we're getting expressly worried about that".

Please make your own judgements on which of these groups really serve the public interest, convenience, and necessity – we must disregard their own personal interests as far as this proceeding is concerned.

Discussion and Comments

1) Again, let us review a short portion of The Communications Act of 1934 (the ACT) which is the Enabling Legislation for the Federal Communications Commission: Sec. 303: "*Powers and duties of Commission -STATUTE- Except as otherwise provided in this chapter, the Commission from time to time, as public convenience, interest, or necessity requires, shall - (section y) Have authority to allocate electromagnetic spectrum so as to provide flexibility of use, if - (1) such use is consistent with international agreements to which the United States is a party; and (2) the Commission finds, after notice and an opportunity for public comment, that - (A) such an allocation would be in the public interest; (B) such use would not deter investment in communications services and systems, or technology development; and (C) such use would not result in harmful interference among users.*"

2) From the above, the FCC's mandated role is to step in, *directly oversee in every aspect* and force a well-made and well-designed series of compulsory, cooperative, unified, and repeatable tests from which we can draw solid conclusions. No group of interest should be left out. A thorough investigation of these concerns and a unified consensus made on *pure facts and irrefutable measurements* must be made before any digital power increase can be considered.

3) Ibiqity and the "Joint Petitioners" made their own set of tests; those tests results did not remotely correlate with independent tests made by several commentators to this proceeding and by their engineering firms who were hired by those independent commentators. If all these tests were properly made on the same subject, they should have given parallel results. They DID NOT.

NPR and CPB performed yet another group of tests and studies using very good computer algorithms and hundreds of thousands of miles of field tests on roads and map points.

Their tests did not confirm the Ibiqity tests, but were substantiated by the independent commentors' tests. So even greater doubt is cast on the whole testing methodology, or at least one of the parties.

4) The FCC should mandate that every worthy engineering and advisory group should participate or at least have a substantial (and not cursory) oversight role. This includes:

- The National Radio Standards Committee
- The Society of Broadcast Engineers
- The Standards Committee of the Institute of Electrical and Electronics Engineers
- Digital Radio Mondiale and DRM+
- The World DAB and DMB Forums
- Ibiqity, Inc.
- National Public Radio and the Corporation for Public Broadcasting
- The Department of Defense and Homeland Security
- Any additional Engineering groups from the "Joint Petitioners"

All of these studies should be under the strict supervision and control of the FCC's Office of Engineering Technology.

5) The IBOC chipsets themselves have been called into question. According to a 2007 study, the receivers are at fault -- the digital receivers are insensitive -- a design flaw! *"Most of the first-generation HD Radio tuners have been noted as being very insensitive, making reception problematic. In addition it has been noted that the analog section of some tuners displays poor reception capabilities compared to older non-digital models."* (Menta, Richard, 2007-03-24, "HD Radio Undermined by Weak Tuners". <http://www.mp3newswire.net/stories/7002/hd-radio2.html>)

Increasing transmitter power to compensate for poor receiver design is NOT the answer; you correct the receiver design and bring it to state of the art standards. Should not the Commission first insist that a full sample of current IBOC radios in the hands of consumers be independently tested for proper operation and replaced if found faulty?

6) Recall that the original 99-325 NPRM of November 1999 said *"Although the sharing of spectrum may facilitate a transition to DAB, it may also result in lesser digital performance during the transition period."* So a few reception problems were expected, and until parity is reached with analog, we cannot sacrifice interference to a great many analog radios for better coverage for a few digital radios especially with the questioning of the performance of the earlier chipsets.

Recall the original 99-325 proceeding said *"[t]he implementation of an IBOC DAB service that causes significant impairment to existing analog service would raise serious questions as to the suitability of the system. We tentatively conclude that IBOC systems should minimize interference to reception of host and adjacent-channel analog signals during hybrid mode operations including, for FM stations, interference to subcarriers."*

Why are we all of a sudden having problems with this during the transition period when we knew it was going to happen and no-one worried about it before now? While we remain in hybrid mode with over 1,000 to 1 ratio of analog to digital radios, the digital users will just have to tolerate this transition period. **They still have analog.**

7) We are finding that television broadcasters who chose to remain in the VHF low band are finding out that impulse noise, ducting, sporadic skip, etc. are compromising their coverage. We are now seeing requests of these broadcasters to abandon VHF and seek UHF assignments. For example:

Station	To		Location	From	VHF/LB	
KCBU	11	DT-CP	PRICE	UT	3	DT-LIC
KETS	7	DT-CP	LITTLE ROCK	AR	5	DT-LIC
KNSO	11	DT-CP	MERCED	CA	5	DT-LIC
KPXB-TV	32	DT-CP	CONROE	TX	5	DT-LIC
KPXG-TV	22	DT-CP	SALEM	OR	4	DT-LIC
KTVR	13	DT-CP	LA GRANDE	OR	5	DT-LIC
WBBM-TV	12	DT-CP	CHICAGO	IL	3	DT-LIC
WCFT-TV	33	DT-CP	TUSCALOOSA	AL	5	DT-LIC
WDKY-TV	31	DT-CP	DANVILLE	KY	4	DT-LIC
WETM-TV	18	DT-CP	ELMIRA	NY	2	DT-LIC
WHP-TV	21	DT-CP	HARRISBURG	PA	4	DT-LIC
WIVT	34	DT-CP	BINGHAMTON	NY	4	DT-LIC
WKYC	17	DT-CP	CLEVELAND	OH	2	DT-LIC
WMAZ-TV	13	DT-CP	MACON	GA	4	DT-LIC
WSKY-TV	9	DT-CP	MANTEO	NC	4	DT-LIC
WTWC-TV	40	DT-CP	TALLAHASSEE	FL	2	DT-LIC
WWMT	8	DT-CP	KALAMAZOO	MI	2	DT-LIC

We will find more stations willing to move to a higher frequency, especially when mobile concerns and problems with the lower channels begin to express themselves. Already, in addition to those above, about 113 low band VHF-TV channels have been vacated. Less than two dozen DTV stations remain on channel 5 and 6 in the US.

8) Do we not have the opportunity to move our digital radio signals (*both AM and FM*) into this spectrum, and in one-felling-swoop, eliminate each and every IBOC-to-analog interference complaint, including future unknown and unforeseeable problems with increased IBOC levels? Also, let us do consider allowing AM stations to put their digital signals in the VHF band, too. That would eliminate all the AM complaints. In fact, could we not RAISE IBOC power in the old VHF-TV low band for better coverage than beforehand thought? (See "VHF: Now Everything You Know is Wrong" by Harry Al Jessell, TVNEWSDAY 6/26/9)

9) The Small Business Administration said that over 90% of radio broadcasters (including non-commercial stations) fell under their definition. (MM Docket No. 99-325, 2/24/2000, "Comments of the Office of Advocacy, U.S. Small Business, Administration on the Notice of Proposed Rulemaking and the Initial Regulatory Flexibility Analysis" The

SBA comment says: "*Advocacy wishes to ensure that the Commission does not decide prematurely to pursue IBOC DAB, without extensive real-world testing and study of DAB transition on small business.*

The Commission should ensure that DAB transition does not interfere with current analog transmissions and should carefully study small broadcasters' ability to shoulder any new equipment costs before changing the current state of audio broadcasting."

This commentator has raised other concerns of the SBA in the prior set of comments. For the sake of brevity, I would like them included here as if set forth again as I do not feel they have been adequately addressed.

10) We have one last chance to get this right; let's take a hard look at what we are doing to the AM and the FM band -- not from the standpoint of those who have invested money in broadcast equipment or technology -- but from the standpoint of the public good -- the users of the spectrum, the 300,000,000 or so Americans who own AM and FM radios.

It is worth reconsidering our past mistakes: *Let's design a system that will give our listening public the best service possible, even if we have to start completely from scratch -- getting rid of the three-color CBS deadly spinning television wheel was costly to CBS, but they survived -- and going over to the all-electronic RCA color TV system was costly, but it was a better move and was compatible.* This present system so reminds me of AM Stereo and FM Quad; now that we have to fiddle with our DTV antennas far too often has me worried we are making the same old mistakes again.

Respectfully Submitted,

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July 17, 2009