

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Petition for Rulemaking to Allow the MA3 All-Digital Mode of HD Radio for AM Stations)	MB. Docket No. _____
)	RM-_____
Revitalization of the AM Radio Service)	MB Docket No. 13-249
)	

To: Office of the Secretary
Attn: Audio Division, Media Bureau

**PETITION FOR RULEMAKING
TO FURTHER AM REVITALIZATION**

Bryan Broadcasting Corporation (“BBC”) hereby respectfully files this Petition for Rulemaking urging the Federal Communications Commission (“Commission”) to initiate a proceeding to authorize the MA3 all-digital mode of HD radio for any electing AM station. Permitting such modernization would—without impairing other competitors in the broadcasting ecosystem (or in the greater spectrum-usage ecosystem more generally)—give AM broadcasters a needed innovative tool with which to compete.

I. BACKGROUND

BBC is the licensee of four AM stations, five FM stations, and six FM translators in Central Texas.¹ As a longstanding license holder and broadcaster, BBC has had a firsthand seat to observe the decades-long decline of audience share for AM stations. In BBC’s experience, the AM band has become so overwhelmed by interference and impulse noise that the resultant audio product is rendered unacceptable to modern listeners. Indeed, the noise floor generated by unlicensed devices impacting the AM band has been noticeable—and increasing—for years.

¹ See generally BRYAN BROADCASTING, *About Our Stations*, <https://bryanbroadcasting.com/who-we-are/> (last visited Mar. 24, 2019).

BBC has searched to quantify this rise, but it appears studies spanning several years at specific locations have not been undertaken in the United States. Abroad, however, testing tellingly showed that the noise floor jumped from anywhere between 10 dB and 40 dB between the 1970s and the early 2000s (i.e., even *before* wide-spread acceptance of millions of interference-contributing technologies as phone chargers, compact fluorescent lamp bulbs, and flat-screen TVs).² Even setting aside empirical demonstration, one only has to listen to an AM broadcast inside a home where smart phone chargers and computer monitors are operating to understand the magnitude of the problem.

BBC acknowledges that Part 15 devices' proliferation has achieved such scale that the reversal of their spurious noise emissions is logistically unrealistic. There is no going back to a quiet, low-noise-floor AM band; non-broadcast noise generators are in the home to stay. However, to simply shrug at this reality is not sufficient; real action to ameliorate today's harms to users of the AM bands must be taken—otherwise, audiences desiring music programming will continue to turn away from AM broadcasts. No modern audience will accept the low audio quality that can be observed by anyone who tunes into the senior band; the noise floor problem represents an existential threat to AM radio. On AM stations where music exists, it is in primarily niche formats; these stations are invaluable to their communities, but discovery by new, young listeners is difficult to promote.

II. THE TIME HAS COME TO ALLOW AM LICENSEES THE OPTION TO LICENSE THEIR STATIONS AS ALL-DIGITAL, USING THE HD MA3 MODE

That is not to say that the existence of this interference for analog AM listening spells inevitable doom for AM broadcasters; a solution exists that the Commission can enable via

² See generally Gorka Prieto *et al.*, *External Noise Measurements in the Medium Wave Band*, IEEE TRANSACTIONS ON BROADCASTING VOL 53.2, at 559 (2007).

Rulemaking. The Commission has previously broached the topic of “all-digital” AM stations, soliciting comment on whether and how to preference stations migrating to, or beginning as, all-digital, among other issues.³ Having developed a record and studied the effects of such, the time has come to initiate a formal rulemaking to adopt rules permitting AM licensees to have the option to go all-digital using the (currently experimental) MA3 mode.

All-digital systems represent the future of AM radio; they will provide the listener with a pristine audio product free of the aforementioned audience-eroding interferences. These digital tools are already entering the market; experimental licenses have been granted, and NAB Labs testing⁴ has shown that the concept works. This has been borne out most recently and famously by Hubbard Broadcasting’s WWFD station in Frederick, Maryland.⁵ Reports published in trade journals say that reception has had differences from analog coverage, but generally manages to replicate it. There is always further work that can be done on the MA3 mode software, but in the meantime, the audience for AM radio continues to erode. As we have all read, some electric car manufacturers are excluding AM radio from their dashboard radios due to impulse noise.⁶ All-digital operation would be the cure for that.

³ *Revitalization of the AM Radio Service*, First Report and Order, Further Notice of Proposed Rulemaking, and Notice of Inquiry, 30 FCC Rcd 12145, 12178-79 ¶¶ 80-84 (2015) (“*2015 AM Revitalization Order*”).

⁴ Cf. NAB PILOT, *All Digital AM Radio Testing*, <https://nabpilot.org/work/projects/all-digital-am-radio-testing/> (last visited Mar. 24, 2019) (describing NAB Labs’ “all-digital AM interference testing in a laboratory environment to supplement [other] field test data” and noting in part that “all-digital [AM] signal would be advantageous because of its increased payload capacity and robustness”).

⁵ See, e.g., Emily M. Reigart, *Hubbard Testing All-Digital AM on WWFD*, RADIOWORLD (July 16, 2018), <https://www.radioworld.com/blog-1/hubbard-testing-all-digital-am-on-wwfd>.

⁶ See, e.g., Meghan Neal, *Why Electric Cars Are Ditching AM Radio*, MOTHERBOARD (Feb. 5, 2016, 10:14 AM), https://motherboard.vice.com/en_us/article/yp3vmj/why-electric-cars-are-ditching-am-radio.

BBC’s WTAW is one of the few remaining AM stations operating the HD hybrid mode MA1. BBC has been very pleased with the audio quality of the resulting HD hybrid signal. The audio broadcast is free of noise, demonstrating the proof-of-concept of a full-digital transition. To listen to WTAW in hybrid HD is to listen without the noise, pops, and buzzes that plague analog AM today. However, the radio frequency mask has a larger footprint than the all-digital MA3⁷; MA3 represents a far superior solution. And BBC has found the hybrid mode MA1 signal to be fragile; dropouts occur in places where no obvious cause exists. By comparison, the Chief Engineer of WWFD has reported he must work hard to “break” his stations’ MA3 signal.⁸

In September last year, Commissioner O’Rielly spoke to the NAB Radio Convention and said the agency has not seen “game-changing innovation” around the AM Revitalization initiative.⁹ His comment was well-taken; a game changer is indeed necessary to preserve AM radio—and *this* is that innovation. While paired FM translators critically extend the shelf life of AM licensees, they do not fix the underlying problem of a poor listening experience when tuned to AM. That is not to say the Commission’s decision¹⁰ to allow AM licensees to repeat an AM

⁷ *HD Radio AM Transmission System Specifications Rev. F*, IBIQUTY DIGITAL at 18-24 (Aug. 24, 2011), <https://www.nrcstandards.org/standards-and-guidelines/documents/archive/nrsc-5-c/1082sf.pdf>.

⁸ RADIOWORLD, *HD RADIO THEN AND NOW* (Oct. 2018) (ebook, *available at* <https://docs.google.com/forms/d/e/1FAIpQLSfDTs70XQpJVzJQl460zUd0E8134SDR4E3E8-aGdoVzNz78xg/viewform>).

While the “cliff effect” of an all-digital broadcast is not a great feature, it is an inextricable way of life in the digital world—one which all digital cell phone users across the U.S. have chosen to accept, as have FM HD listeners and stations who retransmit digital audio via their C-Band earth stations.

⁹ Remarks of FCC Commissioner Michael O’Rielly Before the 2018 Radio Show, Orlando, Florida, at 3 (Sept. 27, 2018).

¹⁰ *See generally 2015 AM Revitalization Order.*

station on an FM translator has not aided many AM licensees; for instance, BBC has begun to see ratings and revenue improvements on its station operated with a built-out FM translator, and is close to finishing its remaining similar buildouts. BBC has every reason to believe its “close-in” AM audience will move to the FM translator station. However, the option to leverage paired FM translators is not universal, making the solution an insufficiently complete fix. By contrast, for major market stations with no FM translator options permitting MA3 migration would give extant licensees (or would-be purchasers) the opportunity to convert and promote a currently struggling AM station—then observe how listeners respond to an unexpectedly high-quality AM product.

In a room full of AM operators, one is likely to hear a specter of concern hanging over all-digital (especially forced conversion). Almost all such fears can be ameliorated by—as BBC proposes—making the transition to MA3 an optional election for AM licensees. Industry’s experimentation with an all-digital approach could be accelerated by actually allowing stations to fully switch to MA3; actual experiential knowledge by stations that elect to switch will provide economic proof-of-concept for stations that delay in order to see how others fare. Additionally, such a market-based approach will provide for customer-optimal outcomes—in markets where HD receiver penetration is insufficient among consumers, AM licensees will be incented to remain analog to maximize listener base; similarly, in markets where HD receiver penetration is high,¹¹ AM licensees will be incented to serve the maximum number of consumers the best

¹¹ See, e.g., *More Than Half of New Cars Now Equipped With HD Radio*, INSIDERADIO (Mar. 5, 2019), http://www.insideradio.com/more-than-half-of-new-cars-now-equipped-with-hd/article_055842a0-3f18-11e9-af44-abb5c736f701.html (also noting that “more than 50 million HD Radio receivers are on the road, 18% of all cars on the road” and that “79% of U.S. radio listeners tune to stations broadcasting with HD Radio technology every week”).

product possible by switching to MA3. And in the end, when an all-digital product goes on the air, listeners will have no reason to consider AM to be inferior.

Ultimately, MA3 AM HD has been tested—and it works. It provides a listening experience without the impossibly hostile noise found on the current AM band. It allows AM broadcasters to program audio to a market that expects to hear digital audio, giving AM broadcasters a platform from which they can compete. It is time to allow licensees to have this tool in their kit to fight AM audience loss.

III. CONCLUSION

For the reasons set forth herein, the Commission should issue a Notice of Proposed Rulemaking proposing to allow AM licensees the option of electing to transition to the MA3 all-digital mode of HD radio.

Respectfully submitted,

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