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Before the
Federal Communications Commission
Washington, D.C. 20554

PETITION FOR RULE MAKING	)	
and	)	**DOCKET NO._____**
REQUEST FOR NOTICE OF INQUIRY	)	

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TABLE OF CONTENTS

PETITION FOR RULE MAKING AND REQUEST FOR A NOTICE OF INQUIRY

The Petitioner Respectfully Requests the Commission to initiate a Rule Making Proceeding and also initiate a Notice of Inquiry. The main purposes of such proceedings are: 1. Revise the procedure for evaluating new technology. 2. Using the revised evaluation procedure reinvestigate the technical basis the Commission used to support its MM-99-325 Order, as said Order is based on flawed advice that violates the very essence of viable broadcasting. In order to avoid irreparable harm to the Public while these proceedings are being conducted, the Petitioner Respectfully Requests the Commission to STAY its MM-99-325 Order, in its entirety.

SUMMARY OF MAIN ARGUMENTS OPPOSING THE MM-99-325 ORDER

In the starkest terms, the MM-99-325 Rule Making can dramatically alter AM & FM Radio as we know it, converting a service that almost every single American uses every day of the year, to a new form of unproven technology whose AM version ONLY WORKS DURING DAYLIGHT HOURS and occupies 1-1/2 times the current bandwidth. Furthermore, it is a major step in DAB Proponents' avowed plan to fully digitalize Radio Broadcasting which will render obsolete every single radio receiver owned by the Public and require their replacement with more expensive radios. In addition, the final Plan [and even the interim plan) requires massive equipment and license expenditures by AM & FM participating stations, and these huge costs, as well as a dramatic increase in interference, may force many independent rural stations out of business.

The AM DAB situation is analogous to an automobile manufacturer introducing a new type of vehicle that can only be driven during daylight hours and which is 1-1/2 times as wide as the widest vehicle on the road, so that it cannot be driven over most of America's highways. And which eventually will force all of the other cars off the road!

BACKGROUND OF REASONS FOR CHANGING
CURRENT RULE MAKING PROCEDURES

The instant Request for Rule Making calls for a major revision of procedures to be used to investigate any technology that is the basis for a requested change in FCC Rules. Clearly, a major revision of procedures for evaluating technology will require substantial time and concentrated effort. Therefore, such a major effort would interfere with the Commission's present schedule which includes many important proceedings. Accordingly, it is Respectfully Requested that the Commission appoint a special "Blue Ribbon" Panel of prestigious individuals who are experienced with the operation of the FCC, such as, former FCC Commissioners.

The most important task of this Panel would be to recommend a substitute procedure for the present Industry Committees and Industry Associations, to advise the FCC that has been ineffective in providing technical support in numerous Rule Making Proceedings. History proves that these Committees and Associations have on numerous occasions failed to provide proper assistance to the Commission and, indeed. have recommended actions that proved counter to the Public interest going back to at least Armstrong and FM Broadcasting and Crosby and FM Stereo.

In the last three major AM Rule Making Proceedings (including MM Docket No. 99-325), an Industry Committee, failed to uncover vital engineering information that would have helped the Commission avoid decisions that are, it is believed, clearly not in the Public interest and cannot withstand serious engineering analysis.'

Now, the FCC, with a full compliment of Commissioners, can take on this most important problem and generate a new technical fact-finding procedure that guarantees that all sides of relevant technical issues will be properly investigated, and that when one comes before the FCC the basic right of Americans to petition their Government will result in a full, fair and effective hearing.

The Blue Ribbon Panel would also be requested to opine on whether there is any significant Public interest in replacing the present free AM and FM broadcasting system with a system which has the natural ultimate goal of rendering obsolete all existing AM and FM radios? Furthermore, will the Public accept an expensive service that MAY offer some possible advantages, especially when the system requires far more expensive radios? And is there justification for forcing broadcasters to pay substantial equipment replacement amounts as well as royalty

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'The fact that Industry Committees, whose members include many highly respected engineers, function so poorly is an enigma. However, recognizing most committee members are unpaid volunteers it becomes apparent that such committees can be steered by the proponents of the Rule Making who may have literally billions of dollars at stake. It is just not consistent with human nature for uncommitted individuals to work as effectively as do people whose fortunes are at stake.

To make the matter even more uneven, it is understood that the DAB Sponsor had full control of the DAB transmitting and receiving equipment. Even the controlled experiments at trade shows have been fraught with failed demonstrations. At a minimum, the sponsors of DAB should make available, at a reasonable price, portable DAB AM and FM radios, so that broadcast consultants, SBE groups and IEEE groups can purchase such receivers and do serious, impartial tests. Please note that such receivers should not be marketed to the innocent public, and all stations doing on-the-air tests should be prohibited from promoting such tests.

It should be noted that NRSC did not even test the final version of the AM DAB system, (see Sect. 4.4 pg. 26 re Audio Quality) as the Sponsor had not fully decided on the final coding technique to be used. And yet, the NRSC and the NAB recommended this system as ready to go. Astonishing!

fees for a new system that actually endangers their business. The Blue Ribbon Panel should also revisit the question of Compatibility and investigate whether it should be an indispensable component of all new AM and FM Broadcasting technology, just as it has been since the birth of radio over 80 years ago?

IS FULL DIGITALIZATION OF AM AND FM BROADCASTING IN THE PUBLIC INTEREST?

The Blue Ribbon Panel should also consider whether DAB proponents' obvious ultimate goal of complete digitalization of AM and FM Radio Broadcasting is in the Public Interest. In order to simplify the inquiry and avoid any engineering issues, let us assume that somehow, miraculously, AM/DAB can serve every region of America, and provide that service after sundown, something that this Petitioner, and even the Sponsor's own engineers presently, have no reason to assume.

Then given even such a miracle, can one believe that the Public would still accept the loss of billions of dollars it has invested in radios that presently serve Americans so well in their homes and in their cars?

Are there any unique advantages of DAB that the average American will believe justifies rendering all their radios useless? Can anyone believe that any such supposed advantage would compensate for the destruction of local stations. the main source of local news and independent voices that many Americans depend upon to keep them informed, especially during this crucial time where America can come under terrorist attack anywhere in our Country?

Finally, the Blue Ribbon Panel should answer the key question re AM DAB: If the technical experts conclude that there is no known method for providing satisfactory AM DAB after sundown, is this flaw sufficient, by itself, to necessitate the withdrawal of the MM-99-325 Order?

It should be noted that foregoing Panel issues are not engineering in nature. They concern public interest issues and Government structure.

TECHNICAL ISSUES

The Petitioner also Respectfully Requests the Commission to initiate, once the Blue Ribbon Panel has recommended, and the Commission has approved of a replacement for the Industry Committee system.[2] an investigation of the following issues:

1. What are the advantages and disadvantages of replacing Analog with Digital transmission in the AM and FM Broadcasting bands?

2. Whether, given the characteristics of nighttime medium wave propagation, and given the narrowband spacing of AM stations, is there any reasonable expectation that terrestrial Digital Broadcasting can, within a reasonable period of time, say five years, provide the same service that KSL, KRVN, WOAI, WABC, WCBS, WLW, WLS, WWL, KNX, WGN, KMOX, WRVA, etc., now offer every night of the year?

As to Issue 1, it is Petitioner's position that such an unbiased engineering evaluation will conclude that, for at least the AM service: a) DAB signal is less robust than the existing Analog system, b) DAB occupies more bandwidth, c) introduces more audible distortion artifacts, d) introduces more holes in coverage, e) the digital channel introduces a programming fatal flaw, seconds of delay, and most importantly, f) is totally unworkable for nighttime operation on the Medium Wave AM Band, a Band which Americans depend upon over vast rural areas of our Country.

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[2] One possible solution would be to use special panels of, say three, eminent semi-retired engineers that have regularly practiced before the FCC. Such an Eminent Engineer Panel (EE Panel) would hold technical meetings, establish test procedures, and witness all laboratory and all field tests of technology under consideration. These engineers might be given the title of Special Administrative Judge and compensated similarly to Administrative Judges that presently serve the Commission. They would be required to take an accelerated course in procedures re holding meetings, introducing evidence in the record, etc., so as to generate a proper record.

It should be noted that some of these eminent engineers would have served on NRSC Committees. Therefore, it should be clear that the Petitioner is not calling for the Commission to discontinue its use of industry committee reports because of any question of the competency of NRSC members, it is the committee system that is "broken," not its membership. Actually, many of the members are well qualified to receive future judgeship appointments. The basic problem with such Committees is that the volunteers' time and effort in participating in committee matters is minuscule in comparison with the efforts of members whose fortune is dependent upon a favorable Commission action. Furthermore, it is believed that in the instant **MM-99-325** case the transmitting and receiving equipment was solely in the hands and control of the Sponsor.

In regard to Issue 2, as one who has spent decades in the development of means for reducing the deleterious effects of fading starting at RCA, it is my opinion that no Digital system will ever, under normal reception conditions, compare favorably with Analog single-sideband (SSB) or even CSSB type signals that are fully compatible with the over half a billion radios Americans use every day of the week.

The Sponsor, even with access to the impressive facilities of Bell Laboratories? has spent over a decade trying to solve this nighttime problem without providing a single successful meaningful demonstration.

MAJOR RECENT FCC DECISIONS REVISING AM TECHNICAL RULES

It is the Petitioner's position that the three most recent major decisions covering AM Broadcasting Technical Standards, (Digital Audio Broadcasting, AM Stereo and related to Stereo, the Rule Making that reduced the fidelity of AM Broadcasting from 15 kHz to 10 kHz), have all been seriously flawed.

Both broadcasters and radio receiver manufacturers have all but completely abandoned AM Stereo which, at one time, had such a bright future. Furthermore, in order for the FCC's selected AM Stereo system to meet spectrum standards, the tone method of testing that had been used since the inception of broadcasting, was replaced by a splatter test and, simultaneously, the audio response of AM broadcasting was reduced from 15 kHz to a maximum of slightly less than 10 Khz.

The instant Rule Making, MM 99-325, has the potential of visiting more serious harm to AM Broadcasting than any other Rule Making has over AM Broadcasting's proud 80 year history, and, indeed, this Rule Making may be a step in its destruction.

To put the effects of the authorized Digital AM proposal succinctly, the DAB system operates only during day-light hours and requires 30 kHz of bandwidth, rather than 20 kHz.

Even its supporters admit to these limitations, but on-the-air measurements show, as proven by one of DAB supporter's publication, (see WOR's Web Page), that its bandwidth is not confined to 30 kHz, and actually produces interference ENERGY many times greater than was acceptable under the Commission's Rules. Indeed. the spectrum photograph clearly indicates that this problem is not limited to first adjacent channels when one considers that AM radios presently used by the public

[3] "Technical Advances in Digital Audio Radio Broadcasting," Proc. IEEE Vol.90, No. 8, Aug. 2002. Note that the six prestigious authors all have Bell Lab backgrounds.

do not have infinite slope filters, nor are they free of intermodulation distortion, and there are a half a billion of them in use.

This admitted interference pattern may well wipe out reception, as we know it, for almost all "Local Channel" stations and most Regionals, which means that many, if not most, AM stations will be unable to continue to effectively serve their listeners.

JUST WHAT ARE THE BASIC PERFORMANCE DIFFERENCES BETWEEN ANALOG AND DIGITAL AM TRANSMISSIONS?

Clearly, DAB's supporters have made effective use of the word "digital." Thus, it is useful to briefly discuss the mystic that now surrounds this widely used word.

To overcome the confusion created by the use of the buzz word "digital," it is useful to enumerate some of the things Digital does not mean:

Digital does NOT equate to high fidelity, better stereo or lower distortion. Digital systems are no better than Analog systems when these performance factors are considered. Indeed, a trained ear will favor an analog signal, as it does not suffer from certain Digital artifacts. Furthermore, when high degrees of frequency compression are used, as required in the AM Digital systems, in order to squeeze its spectrum into AM radio's tight bandwidth, one does not need a trained ear to notice these harsh Digital artifacts.

Another major difference that is misunderstood by the Public, is that Digital signals do not occupy LESS spectrum space than do Analog **signals.**[4]

The real advantage of a Digital signal is that it will reduce the noise of signals that are above a certain signal-to-noise ratio, and thereby, further reduce the noise of low noise signals. However, the penalty is that noisy signals are lost altogether. This is the same phenomenon you noticed when you replaced your analog cell-phone with a digital model.

"This point may be controversial in that digital system supporters will argue that such systems can make use of frequency compression, but they are confusing digital circuitry with digital systems. To frequency compress a signal to take out redundancy components in voice and music, it is admittedly easier to perform such processing with digital circuitry. But, once you have accomplished such frequency compression, there is no reason why you cannot transmit the wave with an analog system, with a reduction in bandwidth over digital. The situation becomes less certain, however, if you are then going to multiplex a large number of signals, but this has nothing to do with AM broadcasting on the Medium Wave Band.

Thus, in "real world" AM broadcasting, where the signal-to-noise ratio in many parts of normal service areas cannot support a digital signal, the situation will be devastating. Actually, digital proponents have claimed DAB will be more rugged than Analog, but a sharp threshold signal is anything but **rugged.**[5]

Analog AM systems can so serve the Public because it can accept a very poor signal and make it useable, so that you hear the last inning, even if it sounds a little noisy.

The fact that the word "digital" has been used even to sell non-consumer products may have actually created serious harm. Witness the September 11th Twin Tower disaster where allegedly lives were lost because digital cellular phones may have been used in locations where the signal-to-noise ratio fell below the system's threshold and complete silence denied life saving communications.

On-the-other-hand, Digital transmissions DO HAVE an extremely important role to play in many communications systems. Those system include situations where a good signal-to-noise ratio is guaranteed and where there is plenty of spectrum available to properly do the job. But Digital is inappropriate for AM radio usage, where every bit of the spectrum is presently being utilized to effectively maintain full coverage of America, day and night.

NRSC CLAIMS THAT STEREO IS THE MAIN FEATURE OF AM-DAB, BUT DOESN'T SEEM TO KNOW THAT THE FCC CAN REVITALIZE AM WITH STEREO IN 24 HOURS WITHOUT DAB AND DO IT NIGHT & DAY

The NRSC, in the very first paragraph of its Report's Conclusions, claims that Digital AM "...offers a chance to revitalize AM broadcasting-offering near FM-quality stereo reception."

'Actually, the DAB AM radio Sponsor provides proof in its own filing to the Commission that its Digital signal is less rugged than the Analog signal it replaces:
1. The DAB AM receiver is structured so that when the Digital signal becomes unusable, the DAB receiver switches to its backup position, the more rugged Analog signal.
2. The Specification authored by the Sponsor, Appendix C, includes on Page 24 re Alternative Spectral Limits, requires the interference to be at least 100 db, 20.5 kHz from the carrier for adjacent DAB systems. Experienced broadcast engineers will recognize that if a signal really requires such isolation, you are clearly not dealing with a **RUGGED** signal that can perform well in the "real world."

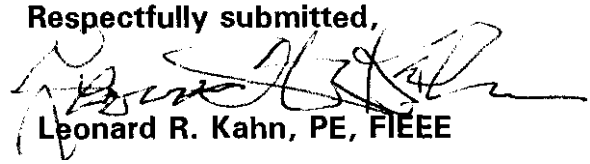
But the FCC has on record reports from stations in every major market, including such stations as; KSL. WNBC. WQXR, WABC, WOR, KDKA, WBT, KRLA, KHJ, WFBR. KOY, WRVA, WNBR. WELI, WTIC, KLAV, WGN, etc., demonstrating that Kahn Communications' Sideband Stereo provides full station coverage, day and NIGHT..even with skywave, providing over a thousand miles of reliable service. This was in the 1980s, but today there are over 100 stations in all sections of our Country that can just throw a switch and provide AM Stereo..and there are fully proven designs of car and home radios available, right now. It just takes a stroke of the FCC's Pen.

Clearly the Petitioner is biased, but he sincerely believes the reasons the phase separation system the FCC selected failed was because of two serious flaws:
1) Platform Motion where, especially at night, the stereo images drift back and forth, an effect that actually made some listeners bilious, and
2) the increased bandwidth of the signal was so severe as to make it impossible to fully pass through narrowband Mono radios, significantly reducing day and nighttime coverage, something a station cannot accept because the vast majority of its listeners listen to mono radios.[6] Neither of these "fatal flaws" were ever forcefully brought to the attention of the FCC by the NRSC.

CONCLUSION

The Petitioner Respectfully Requests the Commission to initiate a Rule Making Proceeding and Notice of Inquiry as requested above. The Petitioner further Requests that the Commission STAY Order MM-99-325, in its entirety, in view of the above alleged irreparable harm that is being created by this Order.

Respectfully submitted,



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cc: iBiquity Digital Corporation

[6] As to the second putative advantage of Digital AM, its ability to transmit slow-speed data, analog signals can also transmit data. Bonneville International, in a cooperative project with Kahn Communications, tested a patented slow-speed data system at KSL that fits within the 20 kHz AM bandwidth, AND DOES THE JOB DAY AND NIGHT, and operates with Stereo in addition to Mono. It should be noted that there have been other AM analog data systems proposed, but the undersigned does not have direct knowledge of such systems. The point is, that if the Public finds a need for slow-speed data service, analog AM also can do the job, day and night.