



November 17, 2010

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

**Re: *Ex Parte* Letter**

**Establishment of a Model for Predicting Broadcast Television Field Strength Received at Individual Locations, ET Docket No. 10-152; Measurement Standards for Digital Television Signals Pursuant to the Satellite Home Viewer Extension and Reauthorization Act of 2004, ET Docket No. 06-94**

Dear Ms. Dortch:

On November 4, 2010, DIRECTV and DISH Network (the "Satellite Carriers") filed an *ex parte* letter in which they and their engineering consultant, Christopher Kurby, purport to provide a predictive model and signal strength measurement procedures by which the eligibility to receive distant network signals for subscribers using indoor antennas could be determined. For reasons set forth herein, the Satellite Carriers' proposals are based upon a series of assumptions and "averaging" that make them patently unsound.

This is the Satellite Carriers' second bite at this apple. Their first attempt was included in their initial Joint Comments.<sup>1</sup> In Reply Comments,<sup>2</sup> the National Association of Broadcasters, the ABC Television Affiliates Association, the CBS Television Network Affiliates Association, the FBC Television Affiliates Association, the NBC Television Affiliates, and the Association for Maximum Service Television (the "Broadcaster Associations") demonstrated that Mr. Kurby's "first bite" proposals would render

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<sup>1</sup> Joint Comments of DIRECTV, Inc. and DISH Network LLC, ET Docket Nos. 10-152 and 06-94, filed August 24, 2010 ("Satellite Carriers' Comments").

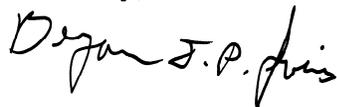
<sup>2</sup> Reply Comments of the Broadcaster Associations in ET Dockets 10-152 and 06-94, filed September 3, 2010 ("Broadcaster Association Reply Comments").

broadcast service virtually useless to the public. Mr. Kurby's proposed predictive model was fatally flawed for many reasons, rendering its results neither "reliable" nor "accurate" as required by the Communications Act and the Copyright Act.<sup>3</sup>

Mr. Kurby's "second bite," in which he attempts to legitimize a revised prediction methodology and measurement procedures for indoor antennas, suffers from many of the same flaws. They are often based upon "assumptions" and "surmisings" that are invalid or unjustified. The errors are then compounded by "weighted averaging." Mr. Kurby's second bite proposals simply ignore and fail to address many of the flaws demonstrated in the Broadcaster Associations' Reply Comments.

The Broadcaster Associations' engineering experts Meintel, Sgrignoli, and Wallace ("MSW") have examined Mr. Kurby's "second bite" proposals to create a predictive model and signal strength measurement methodologies for indoor/outdoor antennas. As set forth in more detail in their analysis attached hereto as Appendix A, MSW finds Mr. Kurby's new proposals as flawed as his original ones.

Sincerely,



Benjamin F.P. Ivins  
Senior Associate General Counsel  
Legal and Regulatory Affairs

Attachment

cc: Hon. Julius Genachowski  
Hon. Michael J. Copps  
Hon. Robert M. McDowell  
Hon. Mignon Clyburn  
Hon. Meredith Attwell Baker  
Susan Aaron  
Evan Baranoff  
Joshua Cinelli  
Eloise Gore  
Dave Grimaldi  
Ira Keltz

Julius Knapp  
William Lake  
Mary Beth Murphy  
Louis Peraertz  
Austin Schlick  
Alan Stillwell

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<sup>3</sup> See Broadcaster Association Reply Comments at 20-42.



**EX PARTE ENGINEERING STATEMENT OF  
MEINTEL, SGRIGNOLI, & WALLACE, LLC**

FCC ET Docket 10-152  
FCC ET Docket 06-94

On November 4, 2010, DIRECTV and DISH Network (the “Satellite Carriers”) filed an *ex parte* letter with the FCC which contained revised (additional) technical proposals related to the above- captioned dockets. This *Ex Parte* Engineering Statement has been prepared by Meintel, Sgrignoli, & Wallace, LLC on behalf of the Broadcaster Associations in response to that filing.

In this latest submission by the Satellite Carriers, their engineering consultant, Mr. Kurby, makes new proposals regarding prediction models and measurement methods. Apparently, these new proposals are in response to the critiques of his original proposals, which were impractical, inaccurate, and unworkable. As was the case with his original proposals, Mr. Kurby’s new proposals are also impractical, inaccurate, unworkable, or unreliable.<sup>1</sup>

In this proceeding the Commission is charged with adopting a regime for prediction and measurement of ATSC DTV signals that will yield the most accurate and reliable results possible. We believe that Mr. Kurby’s new proposals are unsound for a variety of reasons. It is clear that any indoor prediction or measurement regime is complex, as evidenced by Mr. Kurby’s complex and cumbersome proposed methods. These complicated calculations will yield less accurate and less reliable results than the outdoor models now used by the Commission.

Adoption of any regime based upon an indoor environment will be scientifically suspect and certainly will not meet the goal of the Commission to achieve a system that is reliable and accurate, as the statute requires.

**Flaws With Mr. Kurby’s Prediction Methodology**

Mr. Kurby suggests using an arbitrary “weighted average” based upon the sales figures of indoor and outdoor antennas and applying this “average” to a propagation prediction

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<sup>1</sup> In his initial paragraph, Mr. Kurby referred to the “realistic approach” he took in his previous analysis to estimating losses from indoor antennas to DVB-T signals. DVB-T is, of course, a European standard, which is not used in the United States. He then makes proposals based upon information from The North American Standard for Digital Television, another digital television system not used in the United States. The system which is the subject of this proceeding is the ATSC system. The applicability of these data to the ATSC system is questionable.



model. This is fundamentally unsound. Sales of certain antenna models and predicted field strength have nothing to do with each other. This is like saying that if one took the weighted average of the number of red cars and the number of blue cars sold in the U.S., one could predict the number of cars that are kept in a driveway versus the number of cars that are kept in a garage. Obviously, there is no statistically relevant correlation.

In fact, in our experience, consumers purchase antennas based upon marketing claims made on the box or packaging, the sales price, and which antenna is the most pleasing aesthetically. In a science-based regime, such as field strength prediction, the success of product marketing and which antennas “look cool” or were on clearance sale cannot be applied to scientifically-based signal propagation prediction methods.

Moreover, using unsubstantiated sales figures for indoor and outdoor antenna models ignores the fact that most consumers have the option of using an outdoor antenna for reception. If they are subscribers to the Satellite Carriers service, they are already using an outdoor antenna.

Mr. Kurby’s proposal to apply “weighted averages” of indoor and outdoor antennas to create a prediction model over-complicates a simple and straight-forward process that is working successfully now. Adding these additional computations are unsound and unnecessary when the existing prediction methodology yields both accurate and reliable results without the need for extra, specious calculations.

Curiously, Mr. Kurby’s new proposal regarding antenna height confirms the flaws of his original proposal but does nothing to cure them. In his original proposal, Mr. Kurby suggested the use of a 3 foot antenna height. Now, suddenly, using a higher 10 foot antenna height is acceptable for his proposed prediction method. Mr. Kurby suggests that using a 10 foot antenna height will provide “a way to average out a mix of floor heights of 1 and 2 story houses and raised ranch homes vs. ground level ranches.” In essence, Mr. Kurby admits that using the 3 foot antenna height originally proposed was unworkable and now proposes a 10 foot antenna height which, he suggests, “averages out” the floor heights.

This type of “averaging” produces inaccurate and unreliable results in a prediction model. As we noted in our Statements in this proceeding, using outdoor antennas for the prediction modeling at 20 foot and 30 foot heights provides the most accurate and reliable prediction method using sound engineering practices. Adopting “fudge factors” to pad the results of the predictive model to accommodate indoor antennas is neither accurate nor reliable.

With regard to antenna types for the indoor prediction method, Mr. Kurby proposes that UHF bowtie and loop antennas should be assumed. Mr. Kurby might as well have suggested using a paper clip stuck in the antenna terminal of the receiver. The simple fact is that the antenna losses proposed by Mr. Kurby are excessive.



As the Commission has properly assumed for decades, consumers actually desiring to receive an over-the-air signal will take the necessary steps to select an appropriate antenna for their application and location. Assuming use of a high-loss antenna for the predictive model, as Mr. Kurby does, clearly disadvantages over-the-air reception and “predicts” many more “unserved” households, even when those households are, in fact, served by the relevant television station. Mr. Kurby fails to explain why the assumption of a directional indoor antenna with a 20 dB gain preamplifier would not be just as reasonable.<sup>2</sup> This illustrates the point that making assumptions about the performance of indoor antennas is fraught with peril. Given the very wide performance range of various indoor antennas, both with and without preamplifiers, it would be extremely difficult to arrive at a reasonable antenna gain number to use for the predictive modeling. Certainly, Mr. Kurby has failed to do so.

Mr. Kurby has also failed to address how these antennas are actually used by consumers versus how the manufacturer intended them to be used, antenna placement, orientation of the antenna, and many other factors that would need to be considered.

Attempting to characterize the indoor reception environment using additional “averages” and “estimates” is an over-simplification of a very complex indoor propagation environment and it cannot be accurately or reliably predicted by adding further approximations of averages and estimates. These techniques will not provide the Commission with accurate and reliable prediction methods.

Before the Commission could adopt assumptions regarding the performance of indoor antennas for predictive modeling, it would have to undertake a large research and development effort to obtain a large sampling of antennas, measure them in an anechoic chamber, and verify their performance in a variety of environments before it could confidently adopt any assumptions. Even then, the results would ignore the basic fact that the American television broadcasting system has long been predicated on an assumption of outdoor antenna reception.

### **Flaws With Mr. Kurby’s Proposed Measurement Procedure**

With regard to the proposed measurement procedures submitted by Mr. Kurby, we find these procedures to be much more complicated than the existing outdoor antenna measurement procedures currently in use by the Commission.

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<sup>2</sup> This counter-example is for illustrative purposes only. We do not recommend adoption of any regime relying upon indoor antennas—even directional indoor antennas with 20 dB gain preamplifiers—for the many reasons set forth in our Statements in this proceeding.



First, Mr. Kurby suggests using the consumer's antenna for the measurements without regard for the condition of the antenna (i.e., broken/missing elements, rusted connections, etc.). Using the consumer's antenna is very problematic because the condition and operability of the antenna will be unknown. Further, if the antenna is not calibrated against a known standard, it will not yield accurate results.

Second, Mr. Kurby fails to address the variability in antenna performance and suggests that a UHF loop antenna should be the basis for determining reception—even at 50 miles from the desired station. This suggestion, however, is contrary to the Commission's long-held and reasonable assumption that consumers will select an appropriate antenna for their application and location, as noted above. Moreover, without accurate calibration data, even this suggestion is seriously flawed. Field strength cannot be accurately recorded without reference to a known measurement standard (such as a gain antenna calibrated against a NIST traceable dipole antenna).

Third, Mr. Kurby further complicates the measurement procedure by using an arcane and convoluted location requirement relative to the outer wall of the home and then uses a different procedure for homes with metal in their outer walls, assuming that the measurement technician can even identify the appropriate building materials and apply the correct calculations.

Mr. Kurby takes what is a clear, concise, straight-forward, and simple procedure in use today to accurately and reliably measure television signals and unnecessarily complicates the measurement procedure in the interest of accommodating indoor antennas. This procedure is so complex that it requires the measurement technician to calculate the 0.415 lambda distance from the outer wall for each frequency to be measured so as to avoid measurements in the areas of reflection.

This scheme is plainly impractical and would result in measurement procedures that are not consumer friendly, in direct contravention of STELA's requirement.

### **Conclusion**

We continue to believe that the Commission should adopt the existing procedures for both predictions and measurements utilizing outdoor antennas. Using outdoor antennas remains the only sound engineering practice to accurately and reliably predict the field strength at a consumer's home as required in the Act.

For the Commission to transition to some unproven indoor prediction or measurement regime fundamentally means that the Commission would be choosing a less reliable and inaccurate method that could potentially disadvantage/harm consumers and television localism, contrary to the dictates of the Act.



Respectfully submitted:

     /s/  
William Meintel

     /s/  
Gary Sgrignoli

     /s/  
Dennis Wallace

November 17, 2010