

Cohen, Dippell and Everist, P.C.

Before The  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

Interference Immunity            )  
Performance Specifications        )     ET Docket No. 03-65  
for Radio Receivers                )     FCC 03-54

**Notice of Inquiry**

These comments are provided by the firm of Cohen, Dippell and Everist, P.C. This firm and/or its predecessors have been providing consulting engineering services since 1937 to the communications industry. Cohen, Dippell and Everist, P.C. supports the Federal Communications Commission's ("Commission") efforts to develop a written technical record from which an assessment can be made to determine if receiver performance standards would yield additional spectrum efficiency.

As noted by the Notice of Inquiry ("NOI"), the environment of the receiver, its specific application, other users that have been assigned on a non-interference or co-equal basis and adjacent users (such as TV Channel 6 and FM educational) is an important factor.

**Background**

One aspect of the receiver environment is the ambient noise. Ambient noise varies hourly, daily, seasonally, under dry and wet conditions, sunspot cycle, electrical storms and with the presence of other man-made noise sources. For example, some of these influences have been documented in a rural area and it is found that large changes of ambient noise<sup>1</sup> of upwards of 20

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<sup>1</sup>"Radio Influence (RI) and Television Influence (TVI) Voltage Contribution of a 345 kV Transmission Line" David Claes, Ohio Edison Company, IEEE Transactions on Broadcasting, Vol

dB are not uncommon.

This firm has participated in the measurement and documentation of interference to AM, FM and NTSC television from natural and man-made noise sources. One effort occurred during a multi-week measurement program to document power-line noise contribution to the immediate environment. During the initial phase of the measurement program, it was observed that in order to make an accurate assessment of the contribution by the power line, the ability to de-energize and energize the 345 kV transmission line was required. Therefore this measurement program, due to the necessity of making measurements under similar environmental conditions, made every effort to compare measurements under nearly identical environmental conditions<sup>2</sup>. Since the date of those measurements, limited band sharing has occurred and spread spectrum devices have been authorized by the Commission. Further, the Commission has initiated a Spectrum Policy Task Force and is developing a record on Cognitive Radio Technologies. In the broadcasting service, digital radio and television are being introduced to the general public. The thrust of this more intensive use of the various frequencies, as opposed to the use as recent as ten years ago, hastens the day when review of the wisdom of receiver standards is required.

#### Comments

Many users of the spectrum have emerged which require the consideration of receiver

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BC-32, No. 3, Sept. 1985

<sup>2</sup>A total of 139 sets of energized and de-energized RF noise measurements were performed with 114 noise measurement sets were completed within a two hour time frame.

immunity standards. While this firm's expertise is in the area of prediction of service and interference levels and does not manufacture or design receiving equipment, it lends its support as an initial step to the grouping of services outlined in ET Docket No. 03-65.

The point, that we wish to make, is that receiver immunity from known carriers is one issue. It has been our experience that measuring ambient noise required considerable effort and with the advent of devices that emanate noise like signals across any initial service grouping will be even a more difficult task.

This firm supports the Commission's NOI that it should, where possible, involve industry<sup>3</sup> and interested parties in developing standards for the various services. It is noted that the transition from analog type carrier to the digital mode of transmission engenders a new host of issues. For the consumer, it must be made a partner or at the minimum be enlisted if off-the-air reception of broadcast services is to remain a viable option. Furthermore, for many of the initial service groups, system performance should include the total system including the receiving antenna performance. For certain service groups, exclusion of the antenna will not yield sufficient meaningful information to develop a total characterization and understanding of receiver immunity performance.

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<sup>3</sup>It is noted that DTV receiver performance is being developed by Advanced TV Systems Committee T3/S10 with the goal of providing information to the Consumer Electronics group.

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Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Donald G. Everist", written in a cursive style.

Donald G. Everist

President

Cohen, Dippell and Everist, P.C.

Date: July 21, 2003