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Ms. Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: Comments to DA/FCC Number: FCC-17-13
In the Matter of:
Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard
GN Docket No. 16-142

Gentlemen and Ladies:

The following are comments to paragraphs 71 and 72 of the above-referenced document as an over-the-air TV viewer.

Regardless of whether ATSC 3.0 tuners are required in new TV sets, it seems there should be minimum tuner standards, when included with a TV set, for band filtering to prevent overload by non-TV services and linearity requirements to reduce intermodulation distortion. The tighter geographic packing of TV stations should require a specified minimum of adjacent channel rejection. The ability of ATSC 3.0 broadcasters to vary bit rates, and thus signal-to-noise floors, would seem to suggest minimum sensitivity and noise figure standards for the tuners. Specifications for TV tuners are scarce, if available at all, so even technically savvy TV set buyers are in the dark as to which tuner is better for their situation. Hence, minimum tuner standards would be of great service to the public. If tuner standards are adopted, mandatory inclusion of ATSC 3.0 tuners in new TV sets might be an obvious additional step to take advantage of manufacturing economy of scale. In lieu of minimum standards, a requirement that every TV set with an ATSC 3.0 tuner has available a mandated list of specifications for the tuner, would be a good marketplace solution.

Also if the ATSC 1.0 virtual channel methodology is going to be used for ATSC 3.0, the viewer should be guaranteed the flexibility to achieve recognition of every channel with ATSC 3.0 tuners. An aggravation with some ATSC 1.0 tuners is the inability of the tuner to recognize when the viewer wants to access the transmit (operational) channel of a station rather than a different

station with the same numbered virtual channel, after the tuner has been programmed (with the transmit channel numbers mapped to virtual channel numbers). Some tuners always default to the virtual channel ignoring the transmit channel entered. This requires the viewer to reprogram the tuner in order to recognize the additional channel(s). Unfortunately reprogramming may be unsuccessful if the receiving antenna needs to be repositioned for stations from multiple directions or to avoid nulls caused by signal attenuation or reflections that can plague indoor antenna reception. Hence, particularly due to the upcoming station repacking, it would be useful for the viewer to be able to add a transmit channel without being thwarted by a conflict with a previously assigned virtual channel that is identical with the desired transmit channel.

As an example with an outdoor antenna, this commenter has experienced a problem with ATSC 1.0 stations on transmit channels 20 and 21 with virtual channel numbers of v21 and v20 respectively (i. e., 20 and v21 are the same station and 21 and v20 are the same station). The stations are received from different directions. If the receiving antenna is directed toward 20, the tuner assigns v21 to that station. After programming, if the receiving antenna is then directed toward 21 and "21" is entered as the selected channel, the tuner will assume the viewer wants v21 and will not recognize 21 when entered manually and hence cannot assign it to v20.

A workaround for the 20/21 situation is to program the tuner during a period of ionospheric ducting when signal levels soar and overwhelm the receiving antenna directivity. This commenter has used this approach successfully, but it is limited to warmer times of the year. Another workaround (or as an intentional design) is to parallel two antennas pointed in the appropriate directions while the tuner is programming the channels. The side effect can be the phase cancellation of some other desired channels. Tuner channel programming flexibility is a much better solution.

In the case of trying to program stations from multiple directions, two stations may occupy the same transmit channel (co-channel). In this commenter's experience, an ATSC 1.0 tuner in a more fully-featured TV set, was able to recognize both stations. Because both stations had different virtual channel numbers, and maybe of consequence, neither was the transmit channel, the tuner was able to display each station depending on antenna orientation, but displayed the wrong call letters and virtual channel for one of the stations being watched. The viewer can get used to this, albeit with some annoyance. But will ATSC 3.0 tuners be able to handle if one or both of the stations had the same transmit and virtual channels? The post-auction repack is likely to create more of these co-channel situations for viewers near the edges of adjacent TV markets. In the era of analog transmissions, TV stations on the same channel had carriers offset by 10 kHz so the viewer could fine tune to the desired co-channel station. Is there a DTV equivalent, e.g., a flag in the code that ATSC 3.0 tuners could utilize to isolate co-channel stations?

In view of these ATSC 1.0 tuner deficiencies and the increased channel density after the post-auction repack, it would be hoped that all ATSC 3.0 tuners, if not inherent in their design, would have more flexibility to add and delete receivable channels without being hamstrung by always defaulting to the virtual channel. In addition, in the case of stations being received on the same transmit channel, it would be beneficial for the viewer to be able to select between the stations so that the identifying information would match the station received. Overall, ATSC 3.0 tuners meeting some minimum technical standards would make sure the viewing public had a reasonable chance of successfully receiving all the TV channels possible at their location.

Sincerely,

Ronald J. Brey