



Received & Inspected

MAY 31 2016

FCC Mailroom

DeForest Wisconsin  
608.846.1629  
608.576.3457

Jeff.Schumann@manhattan-digital.net  
www.manhattan-digital.net

FCC Secretary Desk  
445 12<sup>th</sup> S.W.  
Washington, D.C. 20554

To be filed with the commissioners, Chairman and Engineers associated with the rule making in reference to the NAB application and ATC application to the rules set by the FCC toward the deployment of ATSC 3.0 and the sales of "126MHz bandwidth".

We provided the following;

1. The copy of the front page of the NAB application summary.
2. Our written opposition to the NAB and ATSC applications.
3. Letter to the trade magazines, Public publications and letter to our federal representatives.

Any questions or concerns of our reply, please contact me.

Regards,

A handwritten signature in black ink, appearing to read "Jeff Schumann", with a long horizontal flourish extending to the right.

Jeff Schumann

Manhattan-Digital  
Owner

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MAY 31 2016

FCC Mailroom

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

In the Matter of

Authorization of Next Generation TV  
For Permissive Use as a Television Standard

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To: Office of the Secretary

**JOINT PETITION FOR RULEMAKING**

AMERICA'S PUBLIC TELEVISION STATIONS  
AWARN ALLIANCE  
CONSUMER TECHNOLOGY ASSOCIATION  
NATIONAL ASSOCIATION OF BROADCASTERS

April 13, 2016

## EXECUTIVE SUMMARY

The story of television in America is one of continuous evolution, with generational leaps in technology creating transformative new viewing experiences. Each new innovation has yielded a better, more immersive and enjoyable viewing experience for American consumers.

Today, broadcasting continues to see significant changes and improvements in video programming, distribution and consumer receivers. Now, 4K ultra-high definition (“UHD”), not just high-definition programming, is available on a number of platforms. Video programming is also incorporating other improvements, such as more immersive and personalized audio, and high dynamic range video that greatly expands both contrast and color range. To keep pace with these innovations, and to set the stage for additional advances in the future, broadcasters need the option to move forward with a new broadcast television transmission standard, as the Commission envisioned when adopting the current digital standard two decades ago.<sup>1</sup>

The Advanced Television Systems Committee (“ATSC”), through a cooperative effort by over 125 member organizations from the broadcast, consumer electronics, cable, satellite, motion picture, professional broadcast equipment, computer and integrated circuit industries, has developed the ATSC 3.0 television (“Next Generation TV”) standard.<sup>1</sup> In this petition, we ask the Commission to allow the next evolutionary leap forward in broadcast television, by permitting broadcasters to use this new transmission standard on a voluntary basis.

The Next Generation TV transmission standard will permit broadcasters to offer innovative technologies and services to the public, including:

- Visually stunning pictures on large-screen televisions with superior reception;
- Broadcast programming with multiple consumer-friendly features, such as interactivity and personalized audio, which exceed those available through the current broadcast standard;
- Access to unlimited viewing of local and national news and the most popular sports and entertainment programming, and trusted educational and children’s programming via mobile and handheld devices such as tablets and smartphones;

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<sup>1</sup> See *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, Fourth Report and Order*, 11 FCC Rcd 17771 (1996) at ¶ 49 (“*Fourth Report and Order*”).

<sup>1</sup> See ATSC Standard: A/321, System Discovery and Signaling (approved March 23, 2016) (Attachment A hereto).

- Seamless integration of broadcast programming with other Internet Protocol (“IP”) services, with the ability to provide state-of-the-art security that content owners depend upon;
- Advanced emergency alert information backed up with live, professional reporters and connecting public safety officials with the public;
- Datacasting that will offer a new broadband data pipe into the home, thereby giving content providers another means for distributing large video and other digital files to consumers, and providing enhanced opportunities for essential public services including education and public safety; and
- The ability to geo-target news, weather, and other programming to better serve the public.

Next Generation TV transmissions will operate within a broadcaster’s existing 6 MHz television channel, and be subject to the same radio frequency interference constraints and requirements that apply to the current digital standard. No additional spectrum is required or requested, and Next Generation TV services can be deployed within a station’s existing coverage contour without causing interference to current DTV stations.<sup>2</sup>

Next Generation TV is not backward compatible with existing television receivers, just as the current DTV standard was not backward compatible with the previous, analog TV standard. To accomplish a seamless implementation of Next Generation TV without disenfranchising viewers, the industry will deploy this new technology in parallel with the existing digital television standard in a voluntary, market-based manner. Parallel implementation will mean that some broadcasters in each market will deploy Next Generation TV, while others will continue to transmit using the current DTV standard. Broadcasters in each market may agree to simulcast their respective signals so that all viewers will be able to receive programming from their local stations in both the current DTV and Next Generation TV formats, free and over-the-air. Like mobile carriers today, which are free to choose when and how to deploy new standards, broadcasters will have the option of choosing when and whether to enhance their current service by implementing Next Generation TV.

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<sup>2</sup> See Meintel, Sgrignoli, & Wallace, LLC, *A Report To The Federal Communications Commission Regarding Laboratory Testing of Recent Consumer DTV Receivers With Respect To ATSC 1.0 and Next Generation TV DTV Interference* (April 8, 2016) (Attachment B hereto) (the “MSW Report”).

To effectuate this plan, petitioners ask the Commission to initiate a rulemaking promptly to consider three key requests:

- First, we ask the Commission to approve the Next Generation TV transmission standard as a new, optional standard for television broadcasting.
- Second, we ask the Commission to approve certain rule changes to permit local simulcasting to enable Next Generation TV to be deployed while ensuring that broadcasts in the current DTV standard remain available to viewers.
- Third, we ask the Commission to specify that Next Generation TV transmission is “television broadcasting” in parity with the current DTV standard, and otherwise to conform Sections 73, 74 and 76 of its rules to permit the deployment of this innovative new standard.

With these changes, broadcasters will have the ability to deploy a new and dramatically improved service to the public without requiring any additional spectrum or government assistance. This enhanced digital IP-based standard will create the bedrock for continuing innovation by the television industry for decades to come. And it will be accomplished in an entirely voluntary manner by the broadcasting and consumer electronics industries working in tandem to extend this new service to broadcasters’ communities, without mandatory timelines for either broadcasters or receiver manufacturers to adopt the new standard.

## CONCERNS ABOUT THE PROPOSED REDUCTION OF TV BROADCAST BAND TO CHANNELS 2 TO 29, AND THE SUGGESTED CONVERSION TO ATSC 3.0 SYSTEM

We are writing as a group of private citizens that also includes some television and telecommunications industry veterans that do not necessarily agree with the ATSC 3.0 introduction as has been suggested, or the proposed repacking of the television spectrum that will eliminate broadcast use of frequencies above UHF channel 29.

The suggestion of that someone can relate to way the Federal Government works like Hitler. This gathered no attention or concern when he came into power. The rest is history!

While we are not comparing the FCC to Hitler, one can say that the people are not aware of what is going on "With the People Frequencies"!

As the custodian and regulator of broadcast spectrum that ultimately belongs to the people of the United States, the Federal Communications Commission is tasked with and trusted to ensure a fair distribution of communications resources to all industries. It is very alarming to read the April 29 notice from the FCC that now proposes to delete 126 MHz from the present UHF television band, for sale to wireless service. At the same time within a few days also comes a joint petition from the National Association of Broadcasters and the ATSC Group concerning a request for a number of television broadcasters to voluntarily start transmitting programming using the ATSC 3.0 system. So it comes to our attention only certain people and companies are directly involved in this process and the American People are excluded.

The FCC notice describes how wireless companies have shown interest in purchasing 126 MHz of broadcast spectrum, which would eliminate existing use of TV channels 30 through 51 on the UHF Band. A few months ago there was talk that such a plan would only take out UHF channels 37 through 51 from broadcast use. The wireless industry seems to be making claims that they will die on the vine and the Internet will be ruined if they don't get as much spectrum as they ask for.

- What about a broadcast system that once encompassed channels 2 through 83 until the 1980s, eliminated UHF channels 70-83 at that time, and then removed channels 52 to 69 during the digital conversion of 2009?

Now you are asking to remove nearly half of the remaining TV spectrum to sell to the wireless companies.

When the 2009 digital conversion happened, there was talk about how digital was going to improve the broadcast experience for the American public. It has certainly lived up to that promise, going from the five major networks including PBS in analog for most average TV markets, to a typical 15 to 25 TV channels now available to viewers in most small and medium sized markets. Those in big cities such as Los Angeles, Chicago, New York, Dallas-Fort Worth, Houston, and Phoenix now enjoy upwards of 50 to 75 television channels over-the-air in digital, with the number topping 100 in Los Angeles and New York. Dozens of new TV services have been created, and this has given incentive to many people to re-connect to free over-the-air TV reception, abandoning or supplementing pay cable and satellite TV services. The FCC was at the center of a very positive thing, and now there are signs that special interests are doing their best to pull out the rug from under a thriving free television viewing experience.

The transfer of 126 MHz of frequency spectrum from broadcast use to wireless use is too much. There really needs to be a public discussion about whether the wireless companies actually need all of these frequencies in a part of the UHF spectrum that has been dedicated to television reception for many years, and whose use has greatly increased in the number of channels now using those airwaves.

We propose;

1. A lesser amount of spectrum for at least a couple of years, and then if more spectrum is needed, the FCC should consider the subject at a later time. Limiting broadcast use to VHF channels 2 through 13 and UHF channels 14 through 29 will create a serious spectrum shortage, and the numbers do not add up, especially in larger TV markets.

It is certainly ironic that the 2009 digital transition was publicized as creating new opportunities for local TV reception, and it has created many new national channels with free distribution, that many of us have come to enjoy and expect. Now we are being told that the Internet is more important than broadcast TV, and that a number of these channels will have to lose off-air local distribution.

It is being soft-pedaled that the solution to spectrum problems is moving TV viewing to the Internet, after reorganizing the TV broadcast spectrum will deny some existing channels a place in the local broadcast spectrum. This is not an acceptable solution.

As some special interests would like to see that TV signals be transferred to Internet-only distribution, with a fee to watch those channels, and also the necessity to pay for a high speed Internet connection that exceeds 10 to 15 Mbps for HD viewing. Pure greed in our opinion, and the FCC will be complicit in aiding the cause of companies that want to profiteer from future TV viewing.

The whole idea is distasteful, with a forced conversion to pay TV mode to watch some existing advertiser supported TV channels. The bigger picture is going to become a social justice issue, creating groups of haves and have-nots for TV programming access. Despite the horribly flawed methods of data reporting statistics on the percentage of population that has access to high speed Internet as defined by the FCC, even those numbers show that millions of people in both suburban as well as rural America do not have high speed internet available at any price. The truth is that the situation is much worse, and that any process that removes access to some existing channels will disenfranchise many of those people, some from ANY television reception at all, even if they wish to pay for it. Reasonably priced high speed Internet is not available everywhere, despite some claims to the contrary. Even so, you are now forcing tens of millions of people to purchase Internet service. What happened to "Freedom of Choice"?

The full impact of a conversion to ATSC 3.0 across the board has NOT been studied properly yet. There are a lot of unintended consequences waiting to be discovered, and some may not be pretty. For those channels that are not relegated to internet-only distribution comes the challenge of getting their signals to the general public via our free airwaves. A 98-page document submitted to the FCC by the NAB and the ATSC Group in April reports some tests that were done on the effects of using the ATSC 3.0 system in an existing ATSC 1.0 environment. Some general claims were made, including that stations could insert an ATSC 3.0 HD channel within the same space that they have existing sub-channels without any negative effects of

interference. It was also said that signal coverage areas using an ATSC 3.0 transmission were “more or less” equal to existing transmissions. There were a number of other technical parameters given, but in lofty terms not understood by the average person. After all of this, they requested permission from the FCC to allow voluntary transmission by broadcasters in the ATSC 3.0 mode for an HD signal.

If such a request was granted on a limited basis, and results were openly reported, we would be in favor of such permission. There are a number of questions that would be answered, many of which we feel cannot be proven for certain in the mostly simulated testing that has been done in previous tests.

2. A real world transmission on an existing TV station would tell us if coverage areas are equal to the existing system. If they are not, we would want to be certain that the FCC would grant sufficient power increases to those stations to restore coverage areas to at least previous contours. It has been stated in other documents that the ATSC 3.0 system by itself can easily transmit two 1080-type HD channels and two standard definition channels on an existing 6 MHz TV assignment.
3. Does the FCC plan on requiring all stations with existing ATSC 1.0 signals to upgrade them to ATSC 3.0?
4. How long of a time frame would a new ATSC 3.0 HD station be allowed to exist with ATSC 1.0 signals on the same carrier?
5. Will technical standards be released to the general public so that independent manufacturers can produce compatible ATSC 3.0 converters and TV tuners so that there are no equipment shortages upon startup of the first ATSC 3.0 transmissions?

There needs to be a logical time frame spelled out by the FCC for all stations to change to a new system, so that the marketplace is not thrown into confusion.

Assuming that advanced testing under real-world conditions is successful, and the FCC goes forward with a repacking of UHF channel use, there is the issue that some sub-channels by virtue of limited space in local TV spectrum may have to transfer to Internet-only distribution. It is understood that money will have to be paid by local viewers for both high speed Internet access as well as subscription to channels in some cases. In turn these channels are not worthy for public purchase and will lose in the game of Hulu and others who have this on a low-cost monthly fee. That is if you CHOOSE to purchase these programs. So in turn no-one wins over this. This will create problems for viewers in locations that still do not have available high speed Internet access. The mostly rural population will be disenfranchised from getting such channels. The FCC needs to find a truly effective method of mandating wireless Internet access that actually reaches rural areas that are still deemed not cost effective enough to be included in current internet expansion initiatives.

Almost everyone besides the TV viewer stands to make a lot of money if the repacking initiative is adopted. Free TV viewing exists today. There will be uncompensated costs for the general public, whether it be to purchase an appropriate set-top box to tune the ATSC 3.0 signals, possibly replace a TV antenna if the new signals are not as robust as existing channels, or in the monthly expense to view TV from an Internet service provider plus a subscription for some channels. Nobody is standing up to assist in paying for these new costs, and everyone else is taking in money.

The FCC is asking broadcasters whether or not they wish to sell their existing spectrum in exchange for money they don't have governance over. Just the right to use that particular frequency. Right now they are

going to be forcing all broadcasters using UHF channels 30 to 51 to move elsewhere down in frequency, below the 600 MHz mark. Existing broadcasters below channel 30 are also eligible to be bought out. It appears that especially in larger markets, there will be a need for all broadcasters to share spectrum with an existing broadcaster, thus the people's frequencies will be turned over to the wireless industry, and in one case at no charge.

As we suggested above that we remain above the 600 MHz. then people can adjust. If additional frequencies are agreed to by the American public, then we can discuss this further.

With that we suggest using any frequencies below 600 to the Wi-Fi industry and allocate a certain amount of bandwidth be given back to the people, and let county governments assign these frequencies for local use of the Wi-Fi signal to the people, Free of charge!

We suggest that no broadcaster presently transmitting on channels 2 to 51 should be eligible for a buyout from the auction. This is otherwise creating a windfall for many station owners that do not own the frequency they are broadcasting on, other than a greed factor. We believe that enough spectrum can be voluntarily obtained by moving existing broadcasters now on channels 30-51, and that a second negotiation can be done with existing broadcasters in a position to share their frequencies.

The public should be given some incentive to upgrade, since they are more or less forced into this situation.

More Technical Issues and Suggestions.

a) One transmitter site for each TV market.

While every station subject to sharing facilities with another existing station is being considered, a study should be made on a market-by-market basis of where the transmitters are located. Most larger markets long ago put all of their TV transmitters in one central location to minimize the need for multiple TV antennas or rotors on each viewer's rooftop. Any new facilities should have a consideration that mandates a transmitter location either adjacent to or part of existing main TV transmitting facilities in that TV market.

b) Consumer TV antennas.

VHF TV antennas, especially those for Low-Band channels 2 to 6 are huge by comparison with UHF types. Use of Low Band VHF allocations should be minimized so to avoid the need for consumers to spend the money to install physically large TV antennas. A combination of cost and inconvenience, coupled with propagation issues (summertime skip) make fulltime use of the VHF Low Band a bad idea to force upon the American consumer. Those using Indoor antennas generally find it next to impossible to get signals indoors at Channel 2-6 frequencies, and UHF is much easier to do.

c) Offer a Low Band TV allocation exclusively for Internet use, in hilly or mountainous areas.

Channels 2 to 6 have much better penetration in hilly and mountainous terrain. In exchange for giving up at least one UHF frequency, offer one Low Band VHF channel for wireless use and dedicate it nationwide.

Ownership Issues.

Limit purchase of Internet spectrum at the proposed auction only to companies owned and operated by Americans. We have given away a lot of America's resources to foreign investors, and our frequency spectrum is a very finite resource. In the interests of promoting American jobs and our economy, there should be strict limits of this type on the percentage of foreign ownership of any companies participating in FCC auctions.

To our Television viewing friends,

Some of you may know that the FCC is changing standards again from ATSC 1.0 current standards to new ATSC 3.0. While we welcome this new technology, as it can provide more channels with better resolution, including two in 1080p HD, it is the decision of each local broadcaster how they configure their multiple channel lineup.

At the beginning stages of this transformation, the FCC was going to sell the UHF Bandwidth above 600 MHz to the wireless industry. We did not object to this. The first auction discussions starts on May 31, and we now find that the FCC wants to sell another six channels of TV spectrum, for a total of 126 MHz to the wireless groups. This is going to set off a spectrum shortage for our local TV broadcasters, who will see only UHF channels 14 to 29 remaining from the original channel 14 to 83 UHF band. Channels will be "packed" together on shared frequencies, and we will no doubt lose some existing television services that we take for granted today. While we realize that some spectrum transfer is necessary to help the wireless telephone and internet industry, it appears that it will come at the cost of the loss of significant existing TV broadcasting. The proposal to remove channels 30 through 51 from television broadcasting is too much of a giveaway to the wireless industry.

If the auction proceeds as planned, from our perspective the following will happen:

- With the sell-off, your local stations are offered money for these frequencies. I mean big money. Some of the local stations in Madison, Wisconsin are valued at 400 million dollars each. Larger TV markets have valuations of over a billion dollars in many cases. Across the country, there are over 200 TV markets. Purchase will be ultimately be paid for by the American consumer in higher telephone and internet bills over time, as the wireless companies recoup their generous investment. Along with the federal deficit for the hundreds of billions of dollars to your local broadcasting stations. Yes, we pay the TV stations for the frequencies we the public own. Yes, we have personal issues with this too!
- There are presently over 85 million Americans that use an antenna to receive such programming. For many of you, this is the only programming you watch and/or receive. That is your choice, which is what we thought America was all about; Freedom to Choose! If things go as they appear to be headed, the Internet will be the only delivery method offered for some channels. Understand there is a fee with this. You will need to pay for an Internet connection and in most cases there will be a subscription fee for some or all the channels through the Internet as this is voluntary. While we don't object to Internet delivery, as it can bring a reliable signal to a much wider geographic area, it does create costs that some people cannot afford, especially the elderly. A larger issue is that high speed internet is still a rare thing in rural America. In many places it is not available at any price, so if TV channels are forced over to IP only delivery, there will be significant reductions in the number of rural residents that have access to those signals. Until true high speed Internet is as common as basic telephone service, all planned changes in the TV system are to the detriment of many

people. There are no free set top boxes or coupons this time around, so that is your expense to update your TV or box to receive these channels.

- IF the FCC auction ends up selling off all frequencies for UHF channels 30 to 51, remaining frequency space is going to be crowded. Our concern is about possible interference from adjacent market signals, especially in the rural areas on the outer fringe of each TV market's coverage. We suggest a cautious jump into these unknown waters, until on-air testing has been extensively done around the entire country. Starting with a frequency allocation set up that does not remove UHF channels 30 through 35 or (anything below the 600MHz bandwidth). These frequencies should not be sold until further discussions are made and more real life testing has been done. All the current testing results available have been done under simulated laboratory conditions.

We have suggested the following to the FCC:

1. Test the system out for a reasonable period of time, such as 24 months with a simulcast of ATSC 3.0 and existing ATSC 1.0 systems.
2. If indeed we do not see any interference, we should consider/discuss a limited number of frequencies to be used at the County level, for delivery of community Wi-Fi systems as a free service. This could be deployed for cell use and for Internet connection within local communities and on area roads, for the benefit of residents as well as travelers. Antennas can be simple and placed on highway road signs or other suitable locations for Wi-Fi hotspots. This would be far less expensive to deploy and maintain, and could offer greater coverage as well as public service.
3. The frequencies above 600 MHz should be leased and not sold to the wireless companies. This would be less expensive for the wireless industry and less costs passed-on to the consumers. Possible new technology in the future may cause us to want these frequencies back without having to buy them back. Some of these wireless companies and major investors are not based in the USA and while we cannot compete in their country, why are we allowing these companies to own our frequencies?

The American public still owns the airwaves in theory, and free broadcasting should not roll over because of pressures from special interests like the wireless industry.

Our goal is not to monopolize any segment of this market, but to offer the people what they own and provide the best possible experience when viewing programming. In the end, offering a choice on how they want to receive their programming and from multiple sources. A system we have relied on and have delivered to us programming since the beginning of TV itself. Why do we want to sell it?

We ask the public for support by contacting your local Federal Congressional Representative and voice your opinion and/or send this letter to them with your signature. We also encourage you to contact the FCC commissioners and Chairman Wheeler and voice your objection to the selling off our frequencies by this non-elected division of our Federal Government.