



Sony 4K Ultra HDTV: “In addition to the previously announced X930C and X940C models, Sony is also adding HDR compatibility to the X850C, X900C and X910C models via a network update, available soon. With this update users will be able to experience vivid HDR content available through Amazon Video—the first video service to offer titles in the premium visual experience.” (Caption text from Sony press release from last fall. Image courtesy: Sony)

Your TV System is Changing – Again!

By Mike Kohl

It is hard to believe that seven years have already elapsed since the Digital TV Conversion of 2009.

The world did not end when it happened, and we now have become accustomed to a great selection of free TV channels received from our local area broadcasters. Do not get too relaxed in that easy chair, because many things that you are very comfortable with are going away, or at least changing, during the next Digital Event.

Special interests have taken over Washington, D.C., and their latest target seems to be centered on the great free television system mentioned above. Representatives and lobbyists have brought their case to the FCC, and many decision makers now believe the story that the Internet is going to crumble from under itself if at least 126 MHz of the existing broadcast TV spectrum is not offered to the wireless industry on a golden platter. And that we will all be paying for that gold plating on that serving tray for many years to come.

The Federal Communications Commission (FCC) has long been given the task as being a good steward of the public airwaves. Remember those last two words, because it used to be a fact that the airwaves were free and owned by the public. Cell phone and other wireless company interests have intimidated our FCC into forcing an auction of all existing UHF TV channels between 30 and 51, for purchase by themselves. This process is being fast tracked, and rushed through without a lot of public awareness, and it is very disturbing how the airwaves are being redistributed to the highest bidder.

Here’s a quick history of the U.S. broadcast television spectrum allocation. In the 1960s, the FCC mandated that

VHF-UHF television tuners be placed in all new TV sets manufactured, for reception of channels 2 through 83. This was back in the days of the three big alphabet networks ABC, CBS and NBC, and before there was a national PBS television service. All transmissions were in analog. Then along came cable, and then later, satellite distribution of entertainment channels.

By the 1980s, an argument was made and approved to sell off the upper UHF channels (70 through 83), which were otherwise mostly used as low-powered TV translators in remote areas. Existing stations were shifted to lower channel numbers on the UHF dial. The Digital Conversion of 2009 sold off UHF channels 52 to 69 to similar telecommunications interests, and space was found lower on the dial. Due to other circumstances, many rural TV translator districts simply shut down forever rather than spend the substantial dollars to make the upgrade to digital. That left TV channels 2 through 51 remaining (37 is reserved as a quiet zone for astronomy use and no TV broadcasts are allowed).

Since 2009 many new TV services have started and succeeded as sub-channels, riding along with existing mostly HD primary TV signals from major network affiliates. People have gotten extremely used to watching numerous specialty channels that often play classic TV shows from their past.

There is a wide variety of choices, often in many languages, seemingly providing something for everyone. Smaller television markets usually enjoy 15 to 25 channel choices, larger regional markets sometimes 50 or more, with the biggest TV markets of Los Angeles and New York hav-

ing over 100 local TV signals on the air.

Enter the Reverse TV Auctions of 2016, scheduled for their first rounds to begin on May 31. The FCC, encouraged by a number of special interests, will test the waters of the broadcast TV market by giving stations across the country an opportunity to voluntarily give up their existing TV licenses in exchange for big money. Or a move to share space with an existing TV station, or completely re-locate from UHF to previously not-so-popular VHF channels 2-6 (low band) or channels 7-13 (high band). Preliminary numbers for the estimated value of these licenses is astounding... anywhere from \$250 to \$500 million per station in many medium markets, over \$500 million in some slightly larger ones, with some big city stations commanding over 1 billion dollars apiece for their station. If there are no takers in the initial auction, prices will be reduced until someone buys them. The goal is to find enough money and freed-up spectrum to move all broadcasters from use of UHF channels 30-51, and squeeze onto channels 2 to 29.

The surprise that goes with this is that a changing of the broadcast system will soon follow. Not entirely connected events, but both need to happen for everything to work, and many outside observers including this author are skeptical that there will be enough space for everyone. There will be a mandate for a change from the existing ATSC 1.0 to the new ATSC 3.0 transmission system. The new system is capable of handling two 1080p High Definition channels as well as two standard definition channels. A group of independent broadcasters, in concert with the NAB (National Association of Broadcasters) have volunteered to be part of a plan that would let them quickly start transmitting HD in the new ATSC 3.0 standard. This will supposedly allow existing ATSC 1.0 signals to simulcast at the same time, with no negative effects of TV reception.

Count me as another skeptic, because from a huge pile of documentation that I have read from submissions to the FCC from the NAB and ATSC people in mid-April, it mentions that some simulated testing has been done. However, there is no mention of any long-term permanent testing of real live TV signals. When you “re-pack” (as the term has been used) all of the existing TV channels to fit somewhere within VHF channels 2 to 13 and UHF channels 14 to 29, even with the proposed new shift to a permanent ATSC 3.0 digital standard, there is not enough room to fit all existing television services. This is even more of a problem in the largest TV markets with over a hundred present broadcasters on the existing system.

Many broadcasters left on VHF during the 2009 Digital Conversion have since shifted to UHF frequencies for the simple reason that UHF TV antennas are much smaller and less costly, making them ideal for urban areas.

Any broadcaster that volunteers or is otherwise convinced to accept a channel 2 to 13 VHF frequency assignment will have the disadvantage of impaired indoor reception that otherwise often requires an outdoor aerial to be installed for reliable reception. Unlike our last Digital



LG brand OLED 4K UHDTV Smart TV unveiled May 24. (Courtesy: LG Electronics)

Conversion, there will be no compensation for the lowly TV viewer, who will be out-of-pocket to make any changes to his antenna system as well as paying for necessary converters or TV replacement in order to receive the new ATSC 3.0 broadcasts.

If all broadcasters are shifted to the use of only channels 2 through 29, it will mean that in many markets, all possible frequencies will be in use, with no alternate channel spacing as we now enjoy, for minimizing of interference. Those often rural residents living in the outer fringes of every TV market may experience substantially increased periods of interference from channels in an adjoining TV market overwhelming their normally local TV market channels during changes of propagation and weather. While more-or-less laboratory simulations may have been done to confirm a lack of interference from adjacent TV channels, only an extremely directional antenna can reduce unwanted interference on the same frequency. This issue should be of great concern to anyone beyond the outer suburbs of any TV market, where Internet service is still greatly lacking.

The loudest suggested (and surprisingly most unquestioned) solution is to shift everything to the Internet. The smell of special interests is very strong here, with the contrived plan appearing to justify anyone wanting to make a financial windfall while moving to Internet-only broadcasting. Even major broadcast networks with alphabet letters are discussing removing availability of signals to local affiliates, in favor of direct feeds of the network to Internet subscribers, and money going directly to those networks.

Think of a carrot, and the carrot representing all of the new sub-channel TV services that have sprung up in recent years. We have been trained to like these carrots, and in order to continue being fed, we may have to pay extra to have them delivered in a different dish, whether we like it or not. The providers of carrots have got us hooked on their product, and are now pushing the buttons of control. It is a situation of The Rich vs. the other 99 per cent, and could rapidly develop into a class issue. When the telecommunications industry has quietly bought off previously free TV spectrum

from the government in the past, nobody noticed or complained. Now a few lucky broadcasters stand to be rewarded by selling their stations to the highest bidder and getting out of the business, and the potential new owners of those frequencies are gladly investing top dollar, because they will be able to squeeze future users of telephone and Internet for more money while getting higher rates. A few enterprising programming companies also stand to become wealthier by shifting the delivery method of certain channels that were advertiser-supported in the past. And as the rural people who lost their translator service years ago because it was too expensive and not cost-effective to convert local facilities to digital, many of these people will again lose access to some of their broadcasters because they do not have access to the high speed Internet that is common in urban core areas.

Government statistics about Internet access are very inflated, and do not represent the true numbers of non-city residents that may lose at least some everyday television reception because the infrastructure of the Internet is not available in their location. The reality is that it is not fair to allow such a massive overhaul of our free broadcasting system without first making high speed Internet as common as basic telephone service is to all Americans.

One possible solution to this basic problem would be a policy change that while inconvenient for the wireless providers, could be in their best long-term interest. Consider that they are being given the opportunity to purchase existing frequency spectrum that has long been used by TV broadcasters. Free spectrum that belonged to the general public is being transferred to them for a fee, and the general public is incurring loss of previously free services from this transaction. The general public is also being put into a position to become a huge driver of future profits for the wireless interests because they will have to find a method of getting high speed Internet.

Would it be fair to suggest that any wireless company that purchases those previous TV broadcaster assets be required to offer a nationally available high-speed Internet service at an equal competitive rate across the country? It would be an ideal solution to fill the gaps caused by geography and rough terrain in certain areas of the country. Putting teeth into telecommunications law to force all players in this industry to sell nationwide without geographic restriction would go a long way towards leveling the playing field.

This would also fill those gaps left by the lucky few telecommunications companies that have received large government grants to extend Internet service into rural areas, but have not actually delivered service when it is less than convenient to reach some remote locations.

Please think about everything presented in this article, and circulate these ideas to your local newspaper, member of Congress, and the Federal Communications Commission. The above changes are going to happen because they are being pushed by special interests. The wireless companies will spend what is ultimately your money generously to position themselves for a profitable future at your expense. TV



Vizio SmartCast M-Series 80-inch 4K UHTV available soon.
(Courtesy: Vizio)

station owners lucky enough to be bought out will receive a generous windfall from this latest digital initiative. Participating TV broadcasters that stay in the business will be compensated by this government process for their hardware and conversion costs. Television set and set-top box converter manufacturers also will enjoy a rosy future. The average American television viewer will pay, pay, pay. Those ways include at least replacement costs for television sets and/or converters for the new ATSC 3.0 system; new TV antennas, especially if some local stations must convert to VHF band broadcasting that requires larger and usually outdoor-located TV antennas; acquisition of high-speed Internet service by some means and payment for some presently free ad-supported television channels.

Change is never convenient, sometimes not very good, and usually costs us money. It is your right and your duty to give your opinions to the decision makers of this country, either directly, or through public media such as letters to the editor of your local newspaper. Complain a little, and let off your righteous indignation about this oncoming situation. If you don't make it a public issue, some positive changes that might have happened will not happen at all. This is one of those times that we need to speak up for the common good of us all. Send those cards and letters, and if you have additional opinions that have not been covered, please write to *The Spectrum Monitor* and let us know.