

## DTV and your Wireless Mics

by Bruce Lee

### Navigating the Wireless Microphone Maze

The final deadline for the switch to Digital Television (DTV) has passed and I thought it might be useful to address the issues that are important to Wireless Microphone users. The deadline for all broadcast television stations to make the change from analog to digital was June 12, 2009. Following is information from the FCC ruling to help you make an informed decision concerning your wireless microphones.

### The 500 and 600 MHz Band

It is important to know that the sky is not falling. Wireless microphones will be able to operate in the UHF frequency range from 470 to 698 MHz (TV channels 14 – 51). They will also be able to operate in the VHF range 174 to 216 (TV channels 7 – 13). It just may be more difficult because it is going to become more crowded. Although fears that all the space will become unusable by wireless mic operators are largely unfounded, there are still concerns. Here are some points from the FCC ruling you should know.

The FCC will allow unlicensed White Space Devices (WSD's) to operate in the UHF TV channels 14 – 51, except for channel 37 and VHF channels 2 - 13. Fixed devices such as wireless broadband internet services are allowed on all those channels while portable devices such as laptops and cell phones are only allowed above channel 20 (506 to 698 MHz).

The FCC has instituted some rules for WSD's that should help provide space for wireless mic users. They include:

- Portable devices must include GPS capability and internet access to a database of channels in use for the location of the WSD
- The database will be administered by a third party (parties) that wireless microphone users may register when and at what frequencies their microphones will be used.
- WSD's will have to access this database hourly and when it is first powered up

WSD's must be able to sense other frequencies in the area and to switch if they find the one they are preparing to which should help to create space for wireless mic use.

These rules look good on the surface but there are also potential problems in the application. For instance, the third party companies have yet to be selected even though WSD's are permitted to be sold after June 12. (In reality these units probably will not go on sale before the end of 2009 but that still is not much time for a third party to be selected and then develop and administer the database.) Also, to date, testing of the WSD's have found they do not do an adequate job of sensing low output devices such as wireless mics.

### Reallocation of the 700 MHz Band

As of June 12 all TV stations have vacated TV channels 52 through 69, which represent frequencies 698MHz through 806MHz. The auction of these frequencies has almost been completed and the winners will have access to them after June 12. What the FCC has yet to declare is the date that wireless microphone users will have to vacate these frequencies. There

is expected to be a transition period but it has yet to be established.

The hard question is what to do about wireless mics owned in these frequencies. First, they will not be rendered unusable June 13. Therefore, the continued use of these units in the short term should not be a problem. The only problem arising would be a licensed user transmitting on the frequency you have your unit set to.

In that case you would have to change to another frequency.

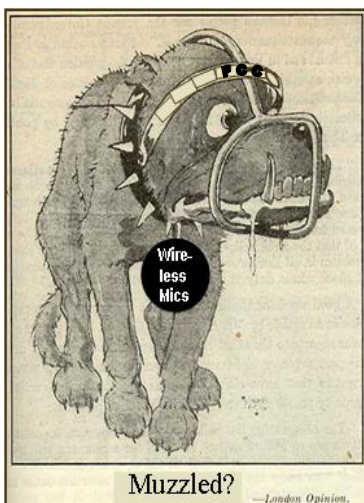
At some point the FCC may set a date when wireless microphones must cease to be used if they are transmitting on frequencies in the 700MHz range. At that point it would be illegal to continue to use the wireless units. Although I find it unlikely that there will be a wireless police squad tracking down unlawful users. But if the FCC does mandate that operating wireless in these frequencies is illegal and sets out a penalty for doing so, then you would be subject to paying that penalty if it is proven you are operating a wireless mic in that range. The only way I think this would actually take place is if by some way your wireless mic interfered with a licensed user and a complaint was filed that resulted in you being identified as the offender.

### What Does All This Mean?

You should be able to continue to use wireless mics although it will become more difficult. The more frequencies a wireless mic unit has available for selection, the more likely you will be able to continue to use it. If you are looking to purchase wireless mics you need to be sure that it is frequency agile and has a high quality transmitter and receiver. (Lectrosonics, Sennheiser and Shure have long been the leaders in wireless microphones and continue to produce units that should work well in today's challenging environment.)

If you currently have units operating in the 700MHz range, you have a decision to make. For now there should not be a problem continuing to use those units. In the future it may become illegal but the FCC has not given guidance on if and when this will happen. My guess is at least through the end of 2009 it should not be a problem but this is only a guess. The FCC may end the use sooner or possibly not at all.

Most manufacturers are offering some type of rebate programs to exchange units in the 700MHz range for units in the 500 and 600MHz range. Some will even give you rebates on competitors' products. My suggestion is to look at the quality of your current unit(s), check and see what you would receive on a rebate and then see if it makes financial sense for you to make the change or to stay with what you have and take a chance.



*"If you currently have units operating in the 700MHz range, you have a decision to make."*



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<sup>4</sup> Shout for joy to the LORD, all the earth, burst into jubilant song with music;

<sup>5</sup> make music to the LORD with the harp,  
with the harp and the sound of singing,

<sup>6</sup> with trumpets and the blast of the ram's horn—  
shout for joy before the LORD, the King.

**Ps. 98:4-6 (NIV)**

## Chicago Splendor

From early on singing and music have been a part of worship. Recently we were flying from Indy to Jacksonville and we were bumped off a connecting flight in Chicago. We rented a car and went to Moody Church for Sunday Services. At a young age, I had been told the stories about D.L Moody and the church he helped start. How, in an old abandoned saloon, he began a Sunday School Mission for underprivileged children from the streets of Chicago.

As we made our way into the auditorium and up into the horseshoe balcony, I was struck with awe, not just with the magnificence of the auditorium, but with a reverence as I recalled the incredible history Moody and the body of believers that gathered in this place have in reaching the lost with the Good News of Jesus Christ. We were soon standing and singing with this congregation of 2500 or so. Voices of young and old, rich and poor were lifted up to the Lord and soon filled this magnificent 80 year building.

The technical systems of the church had been updated in 2003. And although not done well, they were done well enough to be adequate and without becoming overly intrusive. We were sitting not too far from the technical booth in the balcony. What impressed me the most is how they went about their duties without being a distraction to those seated around them and how they operated the system in such a way as to not be a distraction to those listening and watching the lyrics of the songs being projected. In fact, I think there were two screens but at this moment I can't recall. That is how subtle it was.

The point is they could and should have had a better system to work with. But they did the best with what they had and with the talents and gifts that God had given them. I took the time to speak with a couple of them after the service and could tell they had servant hearts and served with humility.

Those in technical ministries have a unique position in the ministry of the church. They can help set the tone for the service in the way they interact with the pastoral staff and others on the platform before the service. They can create a place of calm and confidence by being ready and having all the equipment ready or they can create chaos and anxiety by running around at the last minute trying to make sure everything is working. They can be an encourager with a servant's heart or they can destroy with untimely criticism by their words and/or their actions.

If you are in technical ministries, let me encourage you to come to your place of service early and prayerfully prepared. I know most of you never receive any recognition unless you do something wrong. But there is only One that is really important in seeing what you do and He always notices. Come to your place of service with a heart that is shouting for joy to the Lord. Let your mixing console, your camera or your computer become your harp that makes music to the Lord. Do your best to help all the earth burst into jubilant song with music before the Lord!



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