

# Issues Affecting the Use of Wireless Microphones

## Overview

Some wireless microphones (mics) currently in use will soon be illegal to operate. The FCC auctioned off a frequency bandwidth this past April – one that had been used by TV stations and many wireless mics. The auction of this band was done to meet the demand resulting from the proliferation of cell phones in the US. If your wireless mic is within this auctioned frequency (600MHz), you will need to replace it soon.

## Technical

Wireless mics that use 614-698 MHz frequencies (with a few very narrow exceptions\*) will need to be replaced by July, 2019. According to the Federal Communications Commission (FCC), continued use of these frequencies “must not cause harmful interference, either to the existing broadcast television operations or to the 600 MHz service wireless licensees' operations in the band.”[1] By July, 2020 all must be phased out. In many areas, the need to replace these devices is not driven by these dates, but by the fact that auction winners were allowed to begin testing as of March 2017. T-Mobile is already testing and operating their 600MHz gear in several markets.

Ways to determine if your wireless mic is in this frequency band:

- Look for a sticker on the microphone or the receiver that lists the band (MHz) information.  
[http://shure.custhelp.com/app/answers/detail/a\\_id/5630/~/help-me-find-the-frequency-band-on-my-wireless-mic](http://shure.custhelp.com/app/answers/detail/a_id/5630/~/help-me-find-the-frequency-band-on-my-wireless-mic)
- The frequency band may be included in the users' manual.
- Check the website of the manufacturer of the equipment.

## What to Do Next

If your voice amplification system uses a wireless mic which operates in the newly restricted frequency band, you will need to replace it. Those in areas where testing is underway will need to do so sooner than later.

## *Future-Proof Your Next Purchase*

This article, although dated, gives advice on what products will likely work in the future:

<http://blog.rfvenue.com/2015/02/17/how-to-future-proof-your-next-wireless-microphone-purchase>

The FCC provides this information about available frequencies following the transition:

Many frequencies in the TV bands that had been available for wireless microphone use prior to the auction will continue to be available after the transition period. These include:

- VHF and UHF frequencies on TV channels 2-36, which fall below 608 MHz.
- Certain frequencies in the 600 MHz guard band: 614-616 MHz\*.
- Certain frequencies in the 600 MHz duplex gap: 653-657 MHz\* for licensed use or 657-663 MHz\* for unlicensed use.

Additional frequencies outside of the TV bands also are available for wireless microphone use.

Unlicensed wireless microphone use is permitted on the 902-928 MHz band, the 1920-1930 MHz, and on portions of the 2.4 GHz and 5GHz bands under specified power levels and rules for operation for each of those bands. Licensed wireless microphone use is permitted on several other

spectrum bands, including on portions of the 900 MHz band, the 1435-1525 MHz band, and the 6875-7125 GHz band.

### ***Purchasing Advice***

Some wireless mic manufacturers are offering rebates to help move folks off the 600MHz band. Information about these rebates can be found on their web sites:

<http://www.shure.com/americas/news-events/press-releases/shure-announces-600-mhz-wireless-rebate> (The Shure rebate is based on the Shure product you purchase to replace the illegal unit. You can trade in any wireless mic, regardless of manufacturer, as long as it is capable of tuning to an illegal frequency.)

<https://en-us.sennheiser.com/600-mhz-promo>

<http://www.audio-technica.com/cms/site/16505e589e0be6c8/index.html> (I haven't found the information yet, but their site says this is on the horizon)

It is recommended that churches purchase a professional-grade voice amplification system from a nationally known manufacturer or through a reputable reseller. Purchasing from these sellers will provide the support, warranties and know-how needed to implement a new system. Those with existing systems that tie into other A/V equipment may want to work with the original installer to ensure that all parts of the system work well together.

### **Resources**

***The FCC has several web pages discussing this issue:***

<https://www.fcc.gov/consumers/guides/operation-wireless-microphones>

<https://www.fcc.gov/general/wireless-microphones-0>

[http://shure.custhelp.com/app/answers/detail/a\\_id/5630/~/help-me-find-the-frequency-band-on-my-wireless-mic](http://shure.custhelp.com/app/answers/detail/a_id/5630/~/help-me-find-the-frequency-band-on-my-wireless-mic)

Shure's Webinar about this issue:

<http://blog.shure.com/july-webinar-wireless-spectrum-update-the-600-mhz-incentive-auction/>

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[1] Operation of Wireless Microphones. <https://www.fcc.gov/consumers/guides/operation-wireless-microphones>