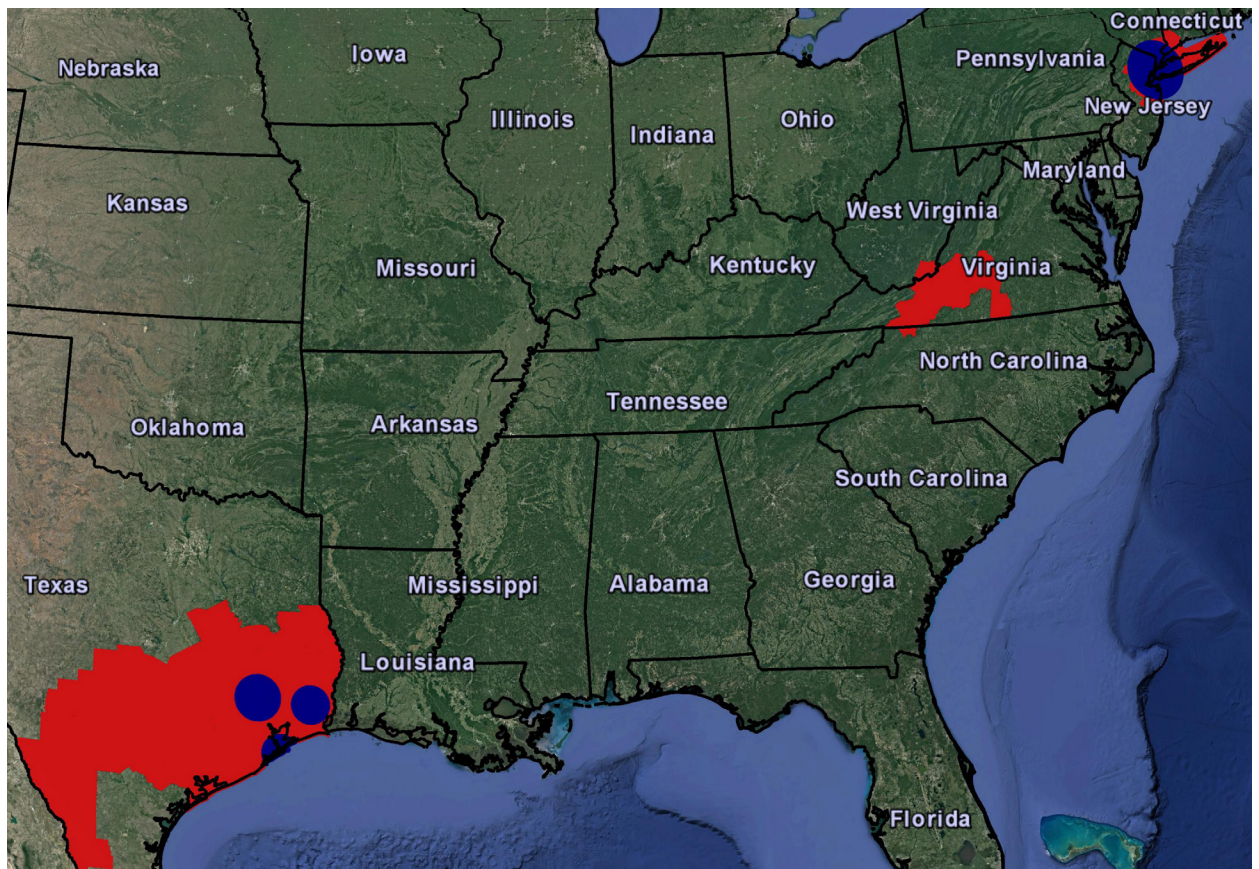


## **Wireless Spectrum Licenses in the 220 MHz Services (220-222 MHz) Band Ideal for Utility, Critical Infrastructure, IoT, M2M, and Rail Applications Available in Southeast TX, Southwest VA, and NYC Metropolitan Areas**

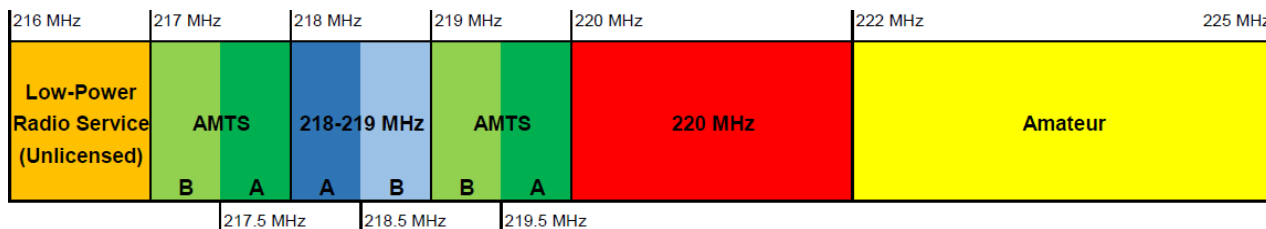
Select Spectrum is offering twelve **220 MHz Services FCC licensed spectrum** in three markets across portions of 7 states including Texas, Virginia, New York and New Jersey. The licenses consist of a combination of market-based and site-based licenses ranging from 50 kHz to 150 kHz per license. Key markets include Houston, Roanoke and the New York City Metropolitan Area.

Available 220 MHz license coverage is shown below; market-based shown as red, site-based blue:



**220-222 MHz spectrum has excellent propagation and can be used for a broad range of applications including fixed & mobile data, voice, and video.** Licenses are in use by and recommend for utility, critical infrastructure, and passenger & freight rail communications, Land Mobile Radio (LMR), Surveillance Control and Data Acquisition (SCADA), Positive Train Control (PTC), M2M/Internet of Things (IoT), and Oil & Gas operations.

The 220 MHz band is shown with its neighboring service groups below:



Subject to FCC Part 90 Private Land Mobile Radio Services, 220 MHz licenses provide excellent propagation and the FCC has approved the 220 MHz band for a broad range of uses and the 5 kHz interleaved channel plan is suitable for many voice and narrowband data applications. 220 MHz spectrum can be used for broadcast or two-way; mobile or fixed; voice or narrowband data. Two-way transmission may be divided between remote and base frequencies or by time delay on the same channel. Maximum base power is based on height above average terrain, with the site license permitted 125 Watts ERP and maximum mobile power is 50 Watts ERP. This provides long range and high reliability in urban and rural areas with multiple large encumbrances such as skyscrapers or trees and mountains, respectively. Networks may employ point-to-point, point-multipoint (tall site) and/or cellular architectures.

220 MHz spectrum is held by a combination of utilities, critical infrastructure, and rail organizations, including **Pepco/Exelon**, a variety of Utility Co-ops and the **National Rural Telecommunications Council**, **Alaska Railroad Corporation**, railroad consortium **PTC-220**, **Amtrak**, **Massachusetts Bay Transportation Authority**, and others for a variety of applications. **VIE Technologies** has found the band ideal for a variety of critical infrastructure, smart grid, M2M and IoT applications for their clients.

Equipment for the band is made by Meteorcomm <http://meteorcomm.com>, Full Spectrum [www.fullspectrumnet.com](http://www.fullspectrumnet.com), 4RF [www.4rf.com](http://www.4rf.com), GE MDS [www.gedigitalenergy.com](http://www.gedigitalenergy.com), XetaWave [www.xetawave.com](http://www.xetawave.com), Cambium <http://www.cambiumnetworks.com>, Alligator Communications [www.alligatorcom.com](http://www.alligatorcom.com), CalAmp <http://www.calamp.com>, and Tait Communications [www.taitradio.com](http://www.taitradio.com). The band is also compatible with a new IEEE wireless standard – 802.16s “GRIDMAN”. This high reliability standard is intended for use by utilities and other critical infrastructure operators. These licenses are valid through 2019 & 2023 when they may be renewed for a small administrative fee.

Basic information about the call signs offered is shown below. Please contact us for additional information regarding these licenses.

Call Sign	Market	kHz Available	2016 POPs	Call Sign	Market	kHz Available	2016 POPs
WPCX365	New York City	50	17,475,702	WPCV298	Beaumont, TX	50	Upon Request
WQAQ954	New York City	50	19,444,084	WPVC300	Galveston, TX	50	Upon Request
WQIM619	Roanoke VA	100	896,445	WPEP805	Houston, TX	50	Upon Request
Multiple	Southeast TX	450	13,464,648				
Multiple	Beaumont, TX	300	466,936				