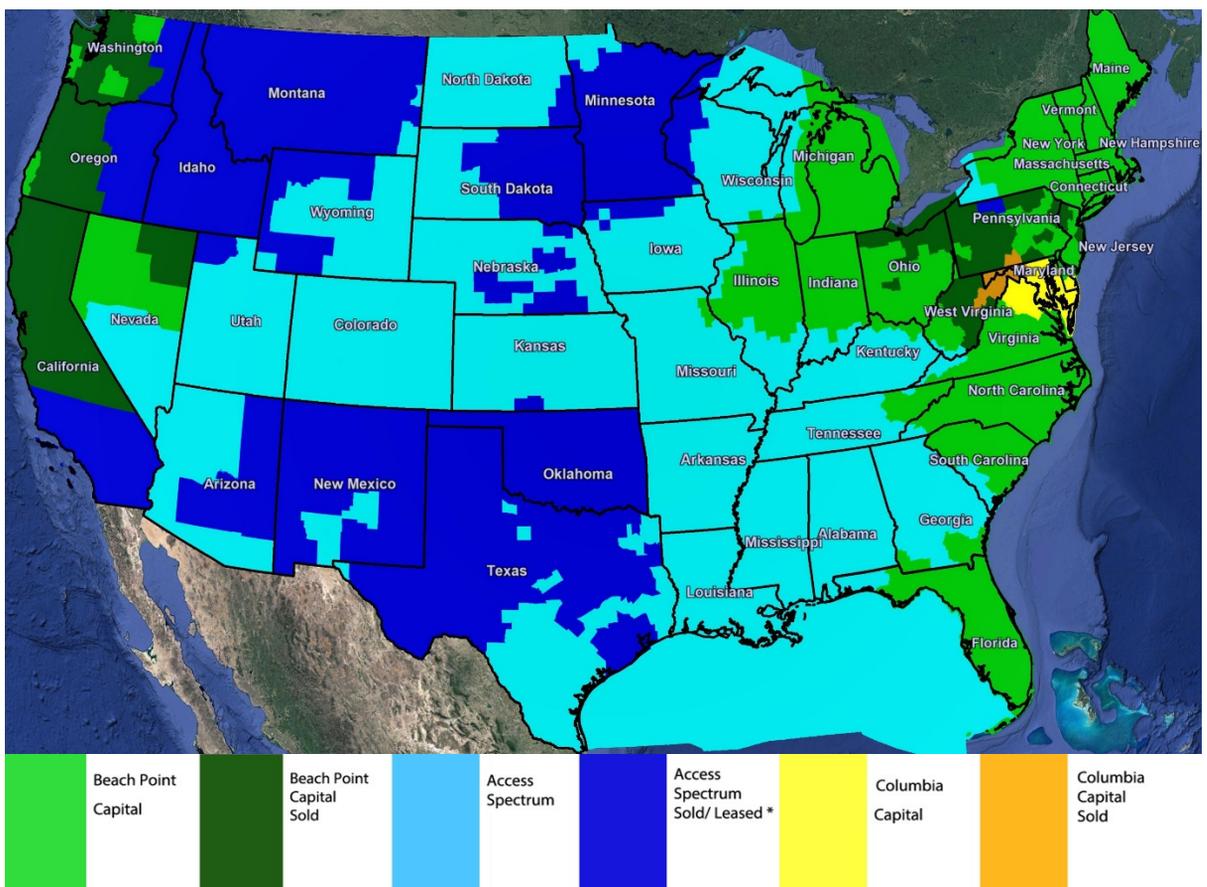


## Wireless Spectrum Licenses in the Upper 700 MHz A Block Band Ideal for Utility and Critical Infrastructure Industry Applications Available Nearly Nationwide

Select Spectrum represents Beach Point Capital (BPC), which holds 2 x 1 MHz of **Upper 700 MHz A Block FCC licensed spectrum**. The Utilities Telecom Council (UTC) recommends this band to utility companies for a wide variety of critical infrastructure applications; Select Spectrum can provide a copy of the relevant UTC White Paper upon request. Coverage is presently available for purchase via Select Spectrum in key markets across the Great Lakes and East Coast, including Chicago, Indianapolis, Philadelphia, Miami, the D.C. Metropolitan Area, New York, and the greater New England area.

The map below shows BPC spectrum available for purchase in light green, with spectrum previously sold being reflected in dark green. Dominion 700's spectrum, also represented by Select Spectrum, is available for purchase and is represented in yellow (orange sold). Access 700's areas for sale are light blue (dark blue sold). **All three license holders will partition the licenses to match utility operating areas to the county level.**

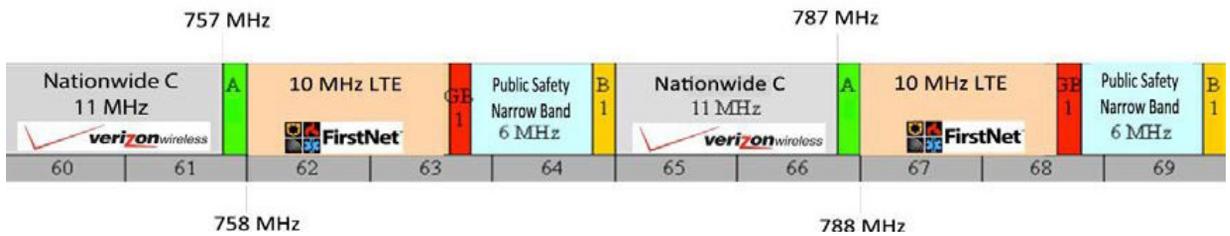


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The Upper 700 MHz A Block is shown with neighboring service groups below:

FCC Upper 700 MHz Band Plan  
Available A Block License Shown in Green



**Upper 700 MHz A Block 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 recommended for, utility and other critical infrastructure communications, including Distribution Automation (DA), Surveillance Control and Data Acquisition (SCADA), Private LTE NB-IoT, and Land Mobile Radio (LMR). Networks may employ point-to-point, point-to-multipoint (tall site) and/or cellular architectures. Engineers recommend small-cell deployments for superior building penetration.

Maximum downlink power is 1000 Watts ERP at 1000 feet, and maximum uplink power is 30 Watts ERP. Maximum out of band emissions limits of  $43 + 10\log(P)$  dB apply to the A Block and the adjacent 11 x 11 MHz Upper 700 MHz C Block where Verizon operates a nearly nationwide 10 MHz paired LTE network. The A Block, located between 757-758 MHz / 787-788 MHz, is similarly protected from interference from the adjacent FirstNet/AT&T channels at 758-768 MHz and 788-798 MHz.

In total, eighteen utilities across the nation have acquired spectrum rights. **FirstEnergy** is replacing its cancelled copper SCADA Links; **Great River Energy** of Minnesota is currently using the band for point-to-multipoint data collection; **National Grid** is using the spectrum for recloser communications; and **NorthWestern Energy** has deployed point-to-point links across Montana, North and South Dakota. Through successful field trials **Salt River Project, Puget Sound Energy, and Avista Corporation** found 700 MHz highly effective. Other buyers include **Portland General Electric, Idaho Power Company, Oncor/Sempra, Navopache Co-op, CenterPoint Energy, Western Farmers Electric Cooperative,** and the **Dawson, South Central, Norris, Loup River, and Perennial Public Power Districts.** Many of these utilities, along with others that are considering the band, have formed a **Utility Users Group.** The Electric Power Research Institute, WiMAX Forum, UTC and various manufacturers all support the implementation of the IEEE approved **802.16s GRIDMAN standard** with compatible equipment in the band.

Pt-Multipoint and Pt-Pt Wireless Equipment for this band is made by Ondas Networks [www.ondas.com](http://www.ondas.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), ABB [www.abb.com/](http://www.abb.com/), MiMOMax [www.mimomax.com](http://www.mimomax.com), Cambium [www.cambiumnetworks.com](http://www.cambiumnetworks.com), PowerTrunk [www.powertrunk.com/](http://www.powertrunk.com/), and Harris/Tait Communications [www.taitradio.com](http://www.taitradio.com).

In partnership with Puloli, [www.puloli.com](http://www.puloli.com), BPC has announced its LTE Narrowband Internet of Things (IoT) initiative ("LI-7") for the Upper 700 MHz A Block. LI-7 will provide long-range IoT connections to support a variety of low bandwidth remote applications at very low-cost per remote device. The system is consistent with the cellular industry's standards as set by the 3GPP standards organization.

The licenses are valid through June 2019 when they will be renewed by the FCC. To be eligible for renewal, license holders must show they meet the FCC's Substantial Service guidelines, which require a limited threshold of use of the licenses be met or exceeded.

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