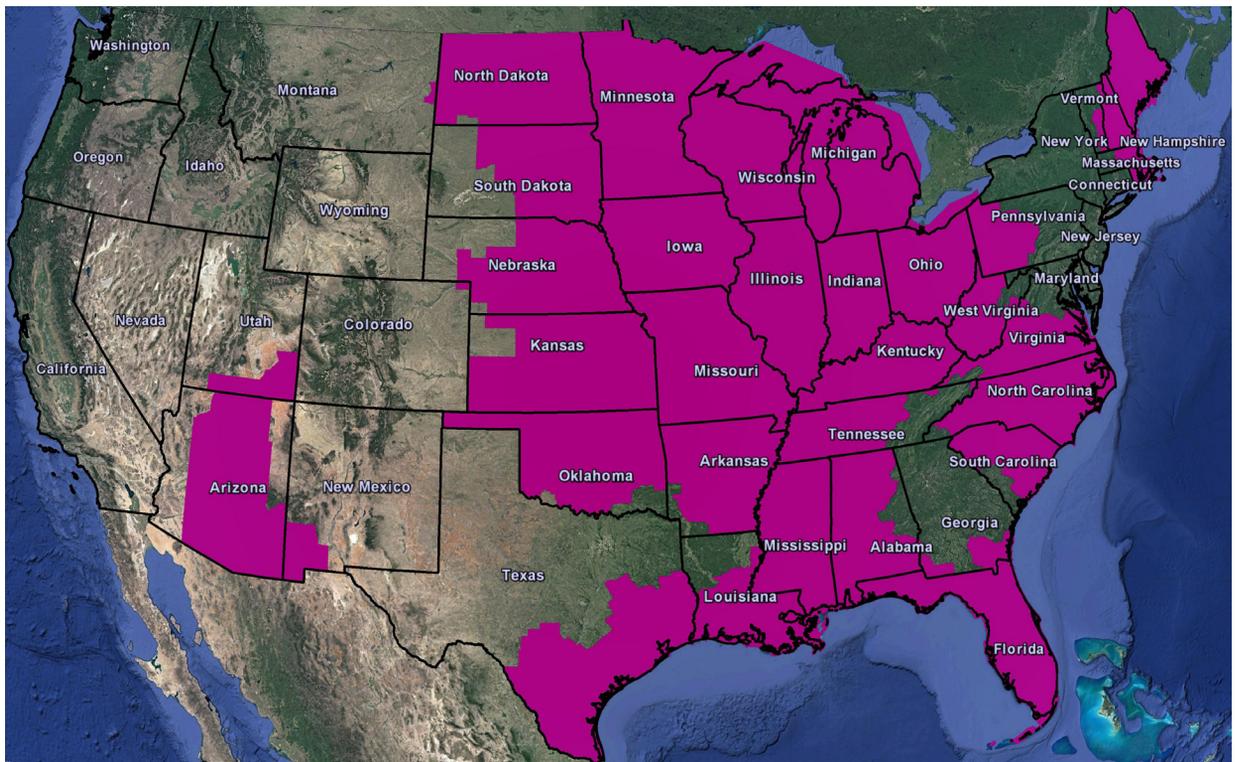


## **Wireless Spectrum Licenses in 931 MHz (UHF Upper Band Paging) Ideal for Land Mobile Radio & Data Applications Available in 31 Major Economic Areas in 36 States**

Select Spectrum is offering **931 MHz (UHF Upper Band Paging) FCC licensed spectrum** across portions of 36 states, covering most of the United States. Coverage includes substantial portions of the Midwest, Gulf Coast, Great Lakes, Mississippi & Ohio River Valleys, and the Mid-Atlantic. Major cities covered include Phoenix, Houston, Chicago, Charlotte, and Miami. Together, these licenses cover the homes of over 154.5 million people in both urban and rural markets.

Available spectrum varies, with between 125 and 625 kHz bandwidth available in each MEA. With adjacent channel blocks in all markets with multiple licenses, it is possible to combine and deploy sophisticated, high-bandwidth networks.

Available markets in this offering are shown in the map below:



These licenses can support a wide variety of and are idea for paging & remote monitoring for critical infrastructure, smart grid, public safety, and utility communications. Common uses include supervisory control and data acquisition (SCADA) systems, Oil & Gas production & transportation, and land mobile radio.

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Visit our website at <http://selectspectrum.com> to learn more

The 931 MHz band is shown with neighboring service groups below:

929-930 MHz Private Carrier Paging	Narrowband PCS	931 MHz Part 22 Paging	Multiple Address System	Indus/ Business Pool
929 MHz	930	931	932	933

931 MHz spectrum can be used for one-way or two-way voice or data transmissions applications from fixed sites or mobile devices. The contiguous frequency assignment can be divided as needed into 12.5 kHz or smaller channels allowing multiple narrowband channels. Further, multiple licenses can be combined for up to 625 kHz in some markets, permitting high speed point-multipoint communications using time division duplex (TDD) technology. Maximum base station power permitted is 3,500 Watts ERP, while mobile units are limited to a maximum 60 watts ERP. Base station power and height are limited to providing an average 20-mile service contour in 8 directions. This provides long range and high reliability in urban areas and rural areas including mountains and trees. Networks may employ point-to-point, and/or point-multipoint (tall site) architectures.

Subject to FCC Part 22 Paging rules, the 2 x 25 kHz channel spacing allows for use for land mobile radio “LMR” and data transmission systems. Each license is permitted 2 x 20 kHz of effective bandwidth with an assigned center frequency, allowing for interference protection and compatibility with narrowband technologies. The FCC is considering a proposal (DA 14-1508) to update Part 22 rules, particularly Subpart E, providing more varied use of the paging bands. The new rules would allow for greater flexibility by permitting full use of the channel spacing & frequency offsets by licensees that hold adjacent blocks and allow innovative technologies such as TETRA and 12.5 kHz/6.25 kHz narrowband LMR equipment. Commenters have been unanimously supportive of the measure, but waivers would be required in the interim to satisfy FCC regulatory compliance. Select Spectrum believes waivers are likely to be granted (see FCC Order DA 15-1064), provided that they correspond to the proposal found in DA 14-1508 and sufficiently meet the stated FCC goals of fostering technological innovation and serving public interest.

Equipment for the band is made by Full Spectrum [www.fullspectrumnet.com](http://www.fullspectrumnet.com), 4RF [www.4rf.com](http://www.4rf.com), XetaWave [www.xetawave.com](http://www.xetawave.com), Alligator Communications [www.alligatorcom.com](http://www.alligatorcom.com), and CalAmp [www.calamp.com](http://www.calamp.com). When multiple licenses are aggregated to 100 kHz or more, the combination 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.

Basic information about the overall offering is shown below:

<u>Markets</u> <u>(MEA)</u>	<u>Largest Market</u> <u>(2016 POPs)</u>	<u>Min</u> <u>kHz</u>	<u>Max</u> <u>kHz</u>	<u>Channel</u> <u>Blocks</u>	<u>Multiple</u> <u>Adjacent</u> <u>Channels</u>	<u>Max 2016 POPs</u>	<u>2016 MHz POPs</u>
31	14,589,866	125	625	25	Yes	154,594,584	61,897,543

Most licenses cover their entire original assignments, but some licenses in dense markets have been disaggregated in accordance with FCC rules including §22.513 of Title 47, Part 22. Under the same rules, licensees may further disaggregate licenses. Individual call sign information is available upon request. Please contact us for additional information regarding these licenses.