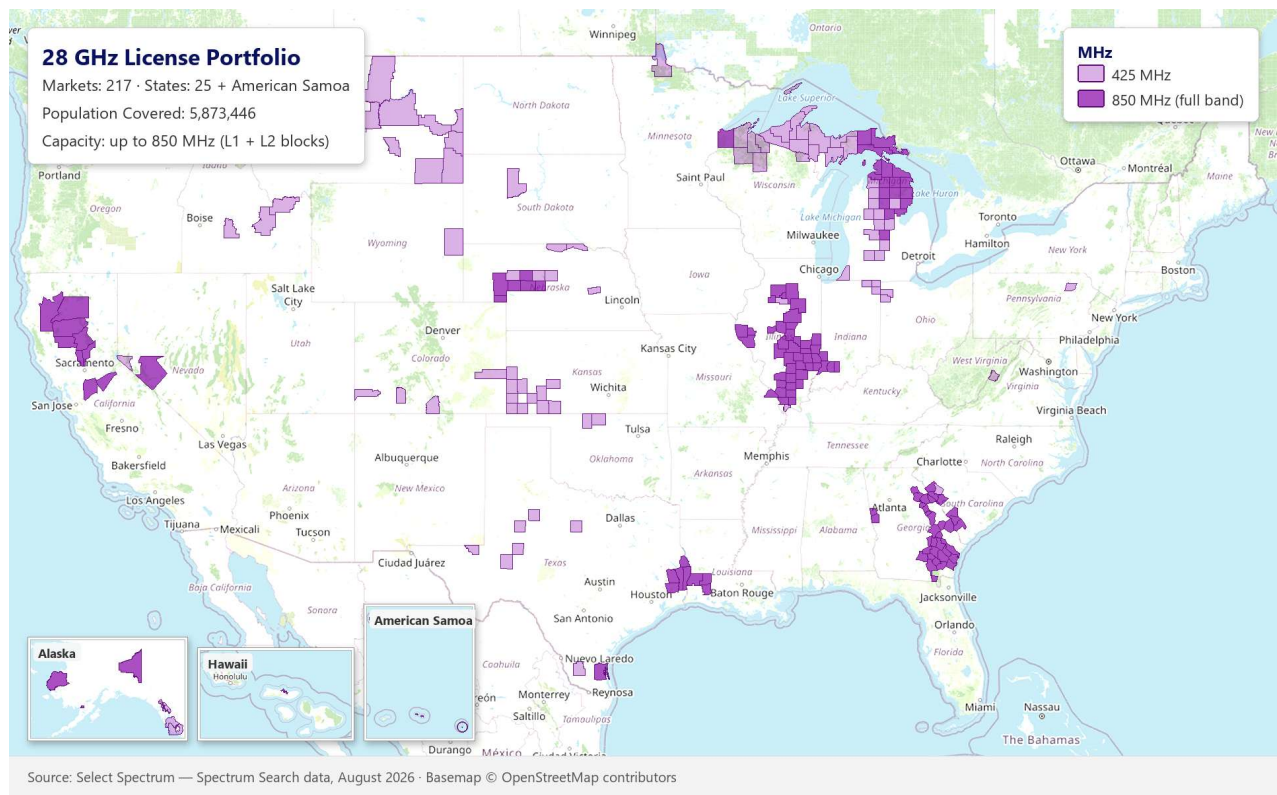


Wireless Spectrum Licenses in the 28 GHz UMFUS Band

Ideal for 5G Fixed Wireless and Mobile Deployments

Available Across 25 States and American Samoa

Select Spectrum, on behalf of our clients, is offering **356 county-based 28 GHz Upper Microwave Flexible Use Service (UMFUS) band licenses** covering 217 county-level markets across 25 states and American Samoa — a combined population of approximately 5.9 million. Each license provides 425 MHz of spectrum, and 131 markets carry both the L1 and L2 blocks for the full 850 MHz of the band, presenting an opportunity to deploy fixed and/or mobile networks that can support high-speed data applications at significant scale.



The **28 GHz (27.500 – 28.350 GHz) frequency band** was made available by the Federal Communications Commission (FCC) via reallocation of the Local Multipoint Distribution Service (LMDS) A Block sub-band channel, A1, which contained 850 MHz of spectrum. The FCC disaggregated the A1 channel and reassigned it to the new UMFUS designation under a county-based licensing regime offering two 425 MHz blocks (Blocks L1 and L2), with remaining FCC-held licenses assigned via Auction 101, which concluded on January 24, 2019.

The 28 GHz band plan is shown below:

27.500 GHz	27.925 GHz	28.350 GHz
L1 (27.500 GHz – 27.925 GHz)		L2 (27.925 GHz – 28.350 GHz)

Each block provides 425 MHz. Markets holding both L1 and L2 provide the full 850 MHz of the band.

The 28 GHz band, and other millimeter wave (“mmWave”) frequency bands, such as 24 GHz and 37/39 GHz, will play a key role in 5G deployments under the UMFUS designation. UMFUS bands are standardized by the 3rd Generation Partnership Project (3GPP) under the 5G New Radio (NR) guidelines, specifically under the “Frequency Range 2” (FR2) umbrella — 28 GHz is designated as 5G NR bands n257 and n261, with n261 spanning exactly 27.500 – 28.350 GHz. UMFUS bands are presently held and/or in use by national mobile carriers, regional telephone operators, and other organizations seeking to deploy mobile networks or provide Fixed Wireless Access (FWA) “last mile” services. Select Spectrum also offers licensed millimeter wave spectrum in the 29/31 GHz band under the FCC’s earlier LMDS licensing, providing up to 450 MHz for point-to-point and point-to-multipoint fixed wireless networks.

UMFUS bands are subject to Part 30 rules and regulations, which include power limitations on fixed and base stations operating in connection with mobile systems — an effective isotropic radiated power, or EIRP, density limit of +75 dBm/100 MHz. Mobile stations must limit the average power of the sum of all antenna elements to a maximum EIRP of +43 dBm. Network deployments may use any duplexing scheme desired, provided compliance with other technical and operational requirements is met. The 28 GHz band can support speeds from hundreds of Mbps to more than 1 Gbps, suited to high-speed backhaul, 5G “to the home,” and mobile applications.

Point-to-point (PTP) and point-to-multipoint (PTMP) architectures are both supported in the band, with 28 GHz equipment made by Nokia (www.nokia.com), Intracom Telecom (www.intracom-telecom.com), and others. Applications include small cell and smart city deployments, serving internet service providers, mobile network operators, manufacturing and logistics campuses, sports and entertainment venues, and oil, gas, and pipeline monitoring and control operations.

Portfolio Summary by State

State / Territory	Lic.	Markets	Population	State / Territory	Lic.	Markets	Population
Alaska	10	7	61,194	Missouri	2	1	18,954
American Samoa	6	3	1,180	Montana	13	13	26,745
California	18	9	1,510,362	Nebraska	18	12	13,642
Colorado	4	4	8,136	Nevada	3	2	54,038
Georgia	60	30	664,093	Ohio	2	2	57,092
Hawaii	2	1	82	Oklahoma	2	2	9,868
Idaho	3	3	4,441	Pennsylvania	1	1	26,069
Illinois	80	41	1,262,346	South Carolina	13	7	175,989
Indiana	11	7	218,449	South Dakota	1	1	2,413
Kansas	11	11	35,022	Texas	19	13	151,285
Louisiana	6	3	91,555	Virginia	1	1	2,232
Michigan	62	36	1,363,357	Wisconsin	6	5	108,672
Minnesota	1	1	3,763	Wyoming	1	1	2,467
Total					356	217	5,873,446

Availability varies by geographic location. Please inquire today for more information.