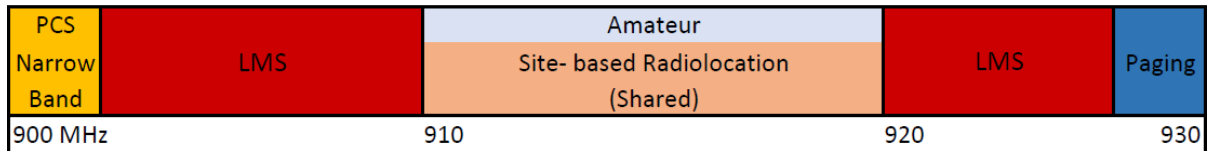


The LMS Band is shown with neighboring service groups below:



These licenses are designated to allow for highly-accurate terrestrial-based location determination services for asset and location monitoring, including indoors and major city applications. The licenses provide excellent propagation and can support throughput of up to 5.5 Mbps per license per site.

The LMS A Block offering has been spectrally disaggregated into 4 MHz licenses, located between 904-906 & 907.75-909.75 MHz, and 2 MHz licenses, located between 906-907.75 & 927.75-928 MHz. The 2 MHz licenses have since been terminated and the timing of reinstatement either directly or through auction is unknown. The remaining spectrum capacity of 4 MHz of bandwidth, located in the “sub-band”, is capable of uplink and/or downlink at 30 Watts ERP and is permissible under FCC rules.

LMS operations must not cause excess interference to industrial, scientific, and medical (ISM) devices and radiolocation government stations. Maximum power of 300 Watts ERP is permitted in the Forward Link, as well as up to a 100% transmit time with no duty cycle, but another license holder has stated that it generally operates at 30 Watts ERP and has implemented a 10-20% duty cycle to avoid interference with Part 15 users operating in the 900 MHz Band.

The LMS licenses are particularly effective in dense city and urban environments, which often contain numerous tall buildings that shield typical GPS signals. Subject to FCC Part 90 rules, LMS spectrum can be used for bidirectional or monodirectional systems that track mobile assets and systems are authorized to transmit data or possibly voice, so long as the applications is related to location functions of the system. Utilizing the spectrum for location-based services for non-mobile applications is possible, and such services have a clear advantage over GPS location services that do not work reliably indoors, are less precise and are distorted by signal absorption and reflection in urban areas, and cannot provide accurate data regarding vertical locations.

LMS licenses have been used for both public safety and commercial mobile and fixed location monitoring and tracking and are recommended as an ideal way for U.S. wireless operators to meet the FCC’s Wireless E911 Location Accuracy requirements, Public Safety to provide E-911 operators and emergency responders with precise locations in urban environments, and for mobile advertising applications.

Equipment for the band is made by a variety of suppliers. The use of the band has been incorporated, for example, by Qualcomm in its current generation of LTE chips. LTE Band 8 (E-GSM) coincides with LMS frequencies available for purchase for 1.4 MHz channels (uplink).

A Block License	Licenses Available	MHz POPs	2016 POPs
4 MHz	128	1,002,906,524	250,726,631

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