

Proposed Modification
Call Sign WI2XJC

Sirius XM Radio Inc. (“SiriusXM”) seeks to modify its experimental radio license issued under Call Sign WI2XJC (the “License”). The only change requested is authority to add six locations to the License to further study the feasibility of using low power terrestrial repeaters to mitigate interference.

The License authorizes SiriusXM to experiment with new types of low power terrestrial repeaters (“Repeaters”), including repeaters fed by Internet Protocol (“IP”) rather than satellite, to determine how a repeater can effectively mitigate interference to SiriusXM satellite radio subscribers created by other wireless services’ transmissions. In particular, SiriusXM has deployed experimental repeaters under the License with the goal of determining how useful those repeaters are to mitigate interference to its Satellite Digital Audio Radio Service (“SDARS”) receivers caused by operations on adjacent band Wireless Communications Service (“WCS”) spectrum, or intermodulation interference from operations in the Advanced Wireless Services (“AWS”) and Personal Communications Service (“PCS”) spectrum. The License currently authorizes experiments with the Repeater to be conducted in eight locations.

In the instant modification application, SiriusXM seeks to expand its testing program to include six additional locations, each with an authorized 97 kilometer radius of operation, in the areas around Denver, CO; Miami, FL; Atlanta, GA; New Orleans, LA; St. Louis, MO and Las Vegas, NV. In order to further its understanding of how Repeaters can best mitigate harmful interference, SiriusXM needs to test Repeaters at additional, geographically distributed locations. Testing at those locations should provide further insights into the impact of variables such as terrain, geography, SDARS signal strength, and WCS/AWS/PCS penetration on the design, placement, and operation of Repeaters being tested under the License.

The effectiveness of the Repeaters to mitigate the degradation that wireless transmissions can cause to SDARS reception varies due to the interrelationship of the factors listed above. For example, the strength of SiriusXM’s transmissions over the continental United States can differ by as much as 7 dB due to the signal delivery contours of SiriusXM’s satellites, directly impacting the susceptibility of satellite radio transmissions to wireless interference and the interference-mitigating impact of the Repeaters. The topography of various cities and the specifics of WCS/AWS/PCS transmission sites also impacts wireless transmissions and their potential for causing interference to SDARS reception, as does the nature and density of SiriusXM’s single-frequency terrestrial networks, which varies city-to-city. Testing is also needed to assess the performance of the underlying IP Wide Area Network used to deliver programming to the Repeaters. These network resources are sourced from multiple service providers, using structures and configurations that are not uniform across the country. IP network transport latency and jitter and error performance characteristics vary with the underlying network architectures, network distances from the IP-Headend, numbers and types of protocol conversions and different service level agreements among participating IP service providers. SiriusXM needs to conduct testing in multiple cities in order to understand how the Repeaters will perform when deployed on different

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and wide-spread IP networks. The more information SiriusXM can gather about how useful and reliable the Repeaters are to mitigate interference in various environments, the more effective those Repeaters will ultimately be at serving their intended purpose of allowing nearby wireless broadband services to operate at higher power levels without creating interference to satellite radio.

The Repeaters operating under the modified license will operate with the same technical parameters as already authorized under the License, including frequencies, RF emission characteristics, and out-of-band emission. As previously indicated in connection with the License applications, SiriusXM is conducting much of this testing in conjunction with AT&T to evaluate the effectiveness of the Repeaters to mitigate interference from AT&T's colocated WCS facilities, but SiriusXM will nonetheless maintain control and responsibility for the repeaters in compliance with the License. Repeaters may be fed via satellite, IP delivery or other terrestrial repeaters in the SiriusXM network. The repeaters in the new locations will be used to deliver redundant services to SiriusXM subscribers to determine whether and how the repeaters are improving SDARS reception in the presence of potentially interfering signals. However, just as with SiriusXM's existing operations under the License, subscribers will be unaware if they receive signal from the experimental Repeaters and no subscriber will be charged any fees directly associated with the testing of those Repeaters.

In sum, SiriusXM has been successfully conducting experiments under Call Sign WI2XJC and wishes to expand those experiments to six additional locations. The proposed modification will further the public interest, as well as the Commission's interests in ensuring that adjacent and proximate channel licensees are able to operate without interference, thereby helping to optimize both SDARS and wireless broadband operations.