Keysight Technologies
Program License Call Sign WL2XQD

Description of Experiment and Measures to Avoid Harmful Interference

(1) *Experiment Description*. The purpose of this license is to conduct experiments to evaluate transmitter/antenna performance and signal propagation characteristics in order to obtain engineering data relevant to mmWave performance in direct path environments. This experiment will take place at Keysight's real-property facilities identified in the license application for call sign WL2XQD.

(2) *Interference Mitigation*. The proposed experiment is highly unlikely to cause harmful interference to any licensed incumbents. Keysight is not aware of any federal radiolocation systems operating in close proximity to Keysight' Santa Rosa, Santa Clara, or Everett campuses. Nevertheless, Keysight will scan the frequency band to assess the presence of incumbent operations prior to commencing any experiments. In addition, as with other Keysight experiments in bands with allocations involving earth-to-space transmissions, Keysight will "ensure that the transmitting fixed station antenna(s) main beam gain tip down and avoid pointing above the horizon." Note – all our experiments are indoors.

Harmful interference to incumbents in the identified bands between 117-148.5 GHz is also highly unlikely. Commercial operations above 95 GHz are very limited, and as the Commission[1] has recognized, atmospheric and propagation losses at these frequencies make interference with radio astronomy operations extremely unlikely.[2] For example, the free space path loss over 30 meters for operations at 122 GHz is over 100 dB.[3] Thus, signals from these experiments will be extremely attenuated well before they reach the boundary of Keysight's real-property facilities, in addition our experiments will be conducted indoors. Also, consistent with 47 C.F.R. § 5.303(a), Keysight will not conduct experiments in any band exclusively allocated for passive services. Finally, Keysight will only conduct indoor experiments using low power.

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[1] *Spectrum Horizons*, First Report and Order, 34 FCC Rcd. 1605 ¶ 5 (2019).

[2] *See id*. ¶ 35.

[3] *Id.* 6