

**Particulars of Operation:** *If there is a need to add multiple frequencies, please add below.*

**Action**

☒ Add Frequency ☐ Modify Frequency ☐ Delete Frequency

Lower Frequency 27500 Upper Frequency 28500 Frequency Units MHz

FX Station

Power 23 Power Units dBm ERP 43 ERP Units: dBm

Mean/Peak: Frequency Tolerance: experimental +/- .001%

MO Station

Power 20 Power Units dBm ERP 31 ERP Units: dBm

Mean/Peak: Frequency Tolerance: experimental +/- .001%

Station Class: ☒ Fixed ☒ Mobile

**Emission Details :**

**Action**

☒ Add emission ☐ Modify emission ☐ Delete emission

Emission: 800MW7W

Modulating Signal: multi-channel digital information

Necessary Bandwidth: 800 MHz

## Exhibit

Applicant seeks Special Temporary Authority (STA) to operate a 28 GHz experimental 5G NR system on a collaborative trial conducted on the campus of the University of Southern California located on 3096 S. McClintock Avenue, Los Angeles California, during November 15, 2018 to December 10, 2018 time period. The STA is needed from November 10, 2018 to December 20, 2018.

The industry organization 3<sup>rd</sup> Generation Partnership Project (“3GPP”) has completed the R15 NR specifications in June 2018 which together with 3GPP final NR specifications in Release 16 will be submitted for consideration as an IMT 2020 Radio Interface Technology at the July 2019 ITU-R WP5D meeting. 5G systems will utilize advanced antenna technologies with beamforming and multiple in multiple out (“MIMO”) technology, as well as more efficient coding and modulation schemes. These technologies are expected to result in higher spectral efficiencies and reduced latency, enabling gigabit per-second (Gbps) mobile and fixed broadband services, significantly faster than today’s average 4G speeds using the Long Term Evolution (“LTE”) connections.

Applicant’s 5G trial will involve communications between up to 2 fixed (FX) base stations (gNodeBs), and up to 4 user equipment (UE) units placed within 500 meters of the base station antennas. The base stations and the UE antennas will be all placed indoors at a height of less than 6 meters above the floor inside Building 4 of the Village at USC. The base stations will have connectivity to internal servers and/or the Internet, to provide content over the 5G air interface. The UEs can provide services to various devices through Wi-Fi access points that are connected to the UEs via Ethernet cable.

The 5G air links provided through this STA will be used to test and verify the performance of various applications that require very high speeds and very low latencies, to confirm the benefits of 5G NR for such applications. The results will provide valuable information to users whose feedback could be used to enable product development and system optimization, as well as to improve future system standards and the deployment processes.



