

## **NARRATIVE STATEMENT**

By this application, and pursuant to Section 5.3(e), (f), (j) and (k) Section 5.54 of the Federal Communications Commission (“FCC”) Rules, 47 C.F.R. §§ 5.3(e),(f), (j) & (k) and 5.54 (2019), Starry Spectrum LLC (“SLLC”) respectfully seeks experimental authority from the FCC to (a) evaluate the functionality, reliability and user acceptability of equipment and technologies being designed and developed to support new and innovative point-to-point and point-to-multipoint communications capabilities; and (b) conduct a market study on a limited basis.

Specifically, SLLC seeks this license so that it may conduct tests in Columbus, OH, and to operate on spectrum in the 37-37.6 GHz band allocated for, among other things, point-to-point and point-to-multipoint communications. *See Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Third Report and Order, 33 FCC Rcd 5576 (2018); *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Second Report and Order, 32 FCC Rcd 10988 (2017); *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Report and Order, 31 FCC Rcd 8014 (2016) (“*Spectrum Frontiers Proceeding*”). SLLC continues to develop business models and plans utilizing point-to-multipoint technologies. Through its experimental network deployment it can evaluate customer acceptability of continued and future networks deployed in this band and other suitable millimeter wave bands. Grant of experimental authority will avoid delay in the introduction of new technologies in this particular market.

SLLC understands and acknowledges that any operation under its license requested herein would be subject to certain conditions and that the FCC may specify additional conditions it deems appropriate. For example, and as discussed in greater detail below, SLLC will advise participants that: (a) the operations are being conducted under an experimental authority issued to SLLC; (b) the company is responsible for the experimental activities; (c) all operations are being conducted on a non-interference basis; and (d) after the test is completed, SLLC will retrieve and recover all devices that do not comply with FCC regulations.

The following additional information is provided in support of this request:

### **1) Company Background and Purpose of Operation**

SLLC, headquartered at 38 Chauncy Street, Boston, MA (FRN: 0025185505), has developed a unique US-based 5G technology ecosystem with innovative wideband hybrid fiber wireless equipment and technology. This allows SLLC to meet users’ communications and information needs, such as for fixed wireless broadband services, backhaul and backbone infrastructure, and broadband transmission capabilities, while increasing broadband competition.

SLLC will evaluate the functionality, reliability and user acceptability of equipment and

technologies being designed and developed for operation in microwave bands to support point-to-point and point-to-multipoint communications capabilities. For example, SLLC will test the technical characteristics of its unique millimeter wave equipment, including the propagation and interference effects in Columbus, OH related to: (a) weather (e.g., rain, snow); (b) foliage; (c) construction materials (e.g., brick, plaster, wood); (d) reflective and multipath transmissions; and (e) power levels..

As noted above, SLLC recognizes that the proposed operations would be in spectrum allocated in the *Spectrum Frontiers Proceeding*. SLLC also wishes to emphasize that its experimental operations will continue to comply with all requirements adopted by the FCC pursuant to that rulemaking. Accordingly, it will coordinate its experimental tests so as not to operate on channels that are currently assigned to or used by existing or future licensees or entities.

### **3) Technical Specifications**

#### **a. Power Levels and Emissions**

- i. Maximum Transmitter Power Output (“TPO”): 12 Watts Mean
- ii. Maximum Effective Radiated Power (“ERP”): 1 kWatt Mean
- iii. Necessary bandwidth: 200 MHz
- iv. Emissions: D7D
- v. Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested. All power levels will comply with the limits set forth in the FCC’s rules, including those relating to human exposure to radiation.

#### **b. Location Information**

SLLC seeks authority to conduct its experimental operations in Columbus, OH. Specifically, SLLC seeks authority to operate and demonstrate products and services: (i) at its own offices; and (ii) at the premises of entities working under SLLC’s authorization to evaluate its equipment, devices, related software, and services. SLLC also seeks to conduct limited market studies at the locations requested that will involve the lease, but not the sale, of the test equipment so that the company may evaluate the acceptability of various marketing models and policies. Accordingly, these operations would be consistent with the requirements set forth in Section 2.805 of the Commission’s marketing rules and 47 C.F.R. § 2.805 (2019); *see also Revision of Part 2 of the Commission’s Rules Relating to the Marketing and Authorization of Radio Frequency Devices*, ET Docket No. 94-45, 62 FR 10466, Report and Order at 11-13, 19-20 (rel. Feb. 12, 1997).

c. Equipment To Be Used

To obtain valid data and present an accurate demonstration of real-world operations, the company must deploy a sufficient number of units during its tests to simulate actual usage. The type of capabilities SLLC seeks to evaluate would likely be deployed by hundreds of thousands of users given the propagation characteristics of point-to-multipoint millimeter wave equipment deployed above clutter.

Moreover, after the experimentation and evaluations cease, SLLC would recall and recover all unapproved devices. If any different treatment becomes necessary during the course of its experimentation, SLLC will seek separate and additional authority from the FCC.

d. Antenna Information and Station Identification

The base station antennas to be deployed operate directionally with a half power beamwidth of 6 degrees. The end user devices operate directionally with a maximum half power beamwidth of less than 8.5 degrees. Since the antennas can be installed in any direction, however, the application characterizes the antennas as omnidirectional. Moreover, the antennas will not extend more than 6 meters above the ground, man-made structure, antenna structure or building. The antennas will be installed and operated in accordance with all FCC and Federal Aviation Administration ("FAA") rules and regulations.

SLLC does not propose to supply station identification as set forth in Section 5.115 of the Commission's Rules, 47 C.F.R. § 5.115 (2015).

#### **4) Limited Market Studies**

To obtain valid data and present an accurate demonstration of real-world operations, SLLC seeks to deploy the proposed capabilities in a manner that simulates actual usage and, thus, allows the company to evaluate the acceptability of various business and marketing models. For example, such authority permits SLLC to determine, among other things, the effect of: (a) demographics (*e.g.*, household size, household income, age and gender, current type of service/provider used); (b) psychographics / behavioral characteristics (*e.g.*, attitudes, values, lifestyles); (c) competition (*e.g.*, the use and availability of fiber, cable and DSL alternatives); (d) adoption dynamics; (e) penetration/growth rate; (f) customer acquisition costs; (g) usage (*e.g.*, during peak and non-peak periods, type and frequency, maximums and minimums, capacity and usage limitations); (h) pricing; and (i) operational performance and reliability (*e.g.*, propagation and interference characteristics) across different user groups and household types.

SLLC respectfully requests that it be granted authority to conduct limited market studies as permitted under Section 5.3(k) and Section 5.5.4 of the FCC's rules, 47 C.F.R. § 5.3(k), 5.54

(2019) at the location discussed above on the spectrum frequencies specified herein.

## **5) Protection Against Interference**

SLLC recognizes that the 37-37.6 GHz band has been assigned in some areas to other licensees. Accordingly, it will coordinate and cooperate with other current or future licensees and users to ensure against interference. Further, company personnel will monitor the operations of other licensees and users before commencing transmissions to avoid interference to such licensees and users. In the event that SLLC receives a complaint of harmful interference resulting from the operations as proposed, it will take immediate action to address the interference, including if necessary discontinuing its operations. The company has designated Mr. Brian Regan, whose contact information is provided below, to act as the “stop buzzer” for this purpose.

Notwithstanding the precautions it will take, SLLC does not expect harmful interference to occur. First, the proposed operations will be limited in scope. Second, the company will monitor the operations of other users before commencing transmissions to avoid interference. Third, SLLC proposes to select channels that are not currently assigned to other licensees or users or are assigned to licensees that have granted consent to SLLC for the proposed operations.

## **6) Restrictions on Operation**

SLLC recognizes that experimental operations must not cause harmful interference to authorized facilities. It does not anticipate that such interference will occur, but should interference occur, SLLC will immediately take reasonable steps to resolve the interference, including if necessary discontinuing operation.

In addition, SLLC proposes to label any unapproved equipment or associated user information conspicuously as follows:

### **FCC STATEMENT**

Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to Starry Spectrum LLC, is strictly temporary, and may be cancelled at any time. Operation is subject to the condition that this device not cause harmful interference.

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not offered for sale and may not be sold until authorization is obtained. Thus, the user does not hold a property right in the device and is required to return the device to Starry Spectrum LLC upon its request.

Also, as stated in its initial application and as emphasized herein, SLLC will recall and

recover all unapproved devices after the experimentation and studies have been completed. If any different treatment becomes necessary during the course of its experimentation, SSSLIC will seek separate and additional authority from the FCC.

## **7) Public Interest**

SSSLIC submits that issuance of a modification of license as requested is in the public interest, convenience, and necessity. Grant of a license will provide significant public interest benefits by allowing SSSLIC to continue its research into the operational and marketing characteristics of innovative equipment and technologies and support important communications capabilities.

## **8) Contact Information**

Company Contact and Stop Buzzer

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