Narrative Statement
Request for FCC Experimental Special Temporary Authorization (STA)

Starry Spectrum LLC (Starry) has been conducting final tests of its 24 GHz equipment pursuant to experimental STA WR9XSE, which is due to expire on October 1, 2021. Starry is in the final stages of its tests and would therefore like to extend the terms of WR9XSE for a short duration. These tests will be completed within 6 months – Starry does not need a 2-year conventional license. Following discussions with the Chief of the Experimental Licensing Branch, Starry is filing for a new STA with the identical technical parameters authorized by WR9XSE.

Starry will use this authority to test its base stations and fixed transceivers for its point-to-multipoint and point-to-point operation. Tests performed will verify transmitter power, receiver sensitivity, beam patterns and data throughput. The performance of a base station with multiple transceivers will be tested.

Need for an STA and Expedited Treatment:

This STA will allow Starry to test the final performance of its 24 GHz equipment prior to final certification and deployment. In addition, an STA is required because Starry's labs are located in Boston, Massachusetts, however Starry does not currently hold 24 GHz licenses in the Boston Partial Economic Area. Starry has notified the licensed user of the spectrum in the test area (T-Mobile) who has not objected to these tests.

Dates of Operation:

Starry would like to commence tests on October 1, 2021. Tests will be completed within 6 months of commencement.

Class(es) of Station(s):

All transmitters will operate from fixed locations.

Location(s) of Proposed Operations:

Starry will test two base stations with fixed terminal locations, as listed below:

1) Base: 70 Inner Belt, Somerville, MA 02143 (42.376909, -71.079563); Terminal: 24 Roland Street, Boston, MA 02129 (42.38174, -71.078)

2) Base: 100 Federal St, Boston, MA 02110 (42.355059, -71.055975); Terminal: 38 Chauncy Street, Boston, MA 02111 (42.353853, -71.059801)

Starry will test one base station site servicing multiple user terminals located across a 3-kilometer radius centered on the base station site location: 1925 Comm Ave Boston, MA 02135 (42.33871, -71.154465)

Equipment To Be Used:

All equipment to be used will be in a prototype form, with FCC conformance testing occurring in parallel. Starry is the manufacturer and the model numbers are not yet finalized. Starry will test a maximum of five (5) base stations at any given time in aggregate at all three locations, and a maximum

of twenty-four (24) fixed terminals in aggregate within the 3-kilometer radii of each base station location

Frequencies:

The tests will be conducted in the 24.25-24.45 GHz range with a single channel centered on 24.350 GHz with a bandwidth of 200 megahertz.

Power Levels:

Mean Base station EiRP will be a maximum of 60 dBm (1000W)
Mean terminal EiRP will be maximum of 55 dBm (316W)

Type of Emission, Modulation Technique, and Bandwidth Required:

200MD7X. The transmitters will operate using OFDMA.

Overall Height of Antenna(s) Above Ground/Orientation:

Antenna will be below the 6 meter limit above the roof line.

The access points are directional antenna with multiple patterns including a 90-degree horizontal with 12-degree vertical beamwidth and 180 degree horizontal with a 14 degree vertical beamwidth. The access points will have varying orientations that generally follow those listed below.

Site 1 centered 27 degrees from True North
Site 1 with a downtilt of 0 degrees
Site 2 centered 247 degrees from True North
Site 2 with a downtilt of -20 degrees
Site 3 centered 20, 70, 270, & 320 degrees from True North
Site 3 with a downtilt of -6 degrees

Stop Buzzer Point of Contact Information

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