

DESCRIPTION OF RESEARCH PROJECT

CCO Fiberlink, LLC (“Charter”), a wholly owned subsidiary of Charter Communications, Inc., seeks a three-year experimental license to test and evaluate millimeter wave coverage and capacity performance in anticipation of 5G wireless development. As part of its efforts to lead the industry in broadband innovation, Charter intends to conduct fixed wireless experiments in the 24.25-24.45 GHz, 24.75-25.25 GHz, 27.50-28.35 GHz, 31.00-31.75 GHz, 31.225-31.30 GHz and 38.60-40.00 GHz millimeter wave bands with the equipment described below. The proposed operations will advance Charter’s understanding of 5G technology and network potential in the millimeter wave bands and will advance the deployment of 5G fixed and mobile services.

Charter will conduct the proposed tests using eight antennas at three locations—Albany, New York; Charlotte, North Carolina; and Tampa, Florida. These experiments will evaluate the 5G frequencies and technologies for their use in point-to-point backhaul, point-to-point fronthaul, point-to-multipoint access network capacity (e.g., rate versus range), and mesh architectures, including their capacity and resiliency. The ultimate goal of these tests is to research the techniques and efficacy of fixed wireless broadband solutions in the 5G frequencies. Tests in each location will utilize fixed transmitters with a 10 km or smaller effective radius in the bands being tested. Due to limited use of the requested bands in the proposed locations, Charter does not anticipate that these experiments will cause harmful interference to incumbent licensees, and Charter will work closely with equipment vendors to ensure no interference occurs. Charter seeks a three-year term for this experimental license to conduct iterative tests and incorporate additional 5G technologies as they become available in 2017 and 2018.

EQUIPMENT LIST

Manufacturer: Cambridge Communications Systems – MetNet

Modulation schemes:

MultiPoint to MultiPoint Integrated Antenna Station modulation rates
QPSK, 16 QAM, 64 QAM, 256 QAM (1.2 Gbps node)

Mean Peak power:

25dBm

Manufacturer: Cambridge Broadband Network – VectraStar

Modulation schemes:

MultiPoint to MultiPoint Integrated Antenna Station modulation rates
QPSK, 16 QAM, 64 QAM, 256 QAM

Mean Peak power:

18 dBm