

DESCRIPTION OF RESEARCH PROJECT

Pursuant to Sections 5.3(j) and 5.61 of the Federal Communications Commission's rules, 47 C.F.R. §§ 5.3(j) and 5.61, CCO Fiberlink, LLC ("Charter"), a limited liability company and subsidiary of Charter Communications, Inc., seeks Special Temporary Authority ("STA") for 180 days, beginning October 22, 2020 or immediately upon grant to test and evaluate operations in the 5925-7125 MHz ("6 GHz") band. Charter intends to test and evaluate the coverage, capacity and propagation characteristics of the 6 GHz band. This testing will advance Charter's understanding of the network potential for unlicensed use of the 6 GHz band.

Location of Testing

Charter will conduct the described tests indoors within a radius of 0.5 kilometers of the following location:

- Englewood, Colorado at 39°33'40.3"N, 104°49'17.1"W

Description of Testing

The ultimate goal of these tests is to research the techniques, and potential throughput and capacity of 6 GHz over the air performance. The tests will utilize fixed and mobile transmitters with a 0.5 kilometer or smaller effective radius. Charter plans to conduct all testing indoors in the proposed locations in order to ensure that these experiments will not cause harmful interference to incumbent operations, and Charter will work closely with relevant parties as necessary to ensure that no interference occurs.

Radio Equipment Description

For the testing, Charter will use three models of fixed and mobile equipment. The technical information below provides the greatest bandwidth and power levels intended to be used for each type of equipment to be used for operations in the 6 GHz band.

Equipment	Fixed or mobile	Tx Power (mW)	ERP (mW)	Mean or Peak Power	Frequency Tolerance (%)	Emission Designator	Signal Modulation Format(s)
Prototype	Fixed	400.0	800.0	Peak	+/- 0.002	20M0X7D 40M0X7D 80M0X7D 160MX7D	OFDMA
Prototype	Mobile	304.75	609.5	Peak	+/- 0.002	20M0W7D 40M0W7D 80M0W7D 160MW7D 320MW7D	OFDMA
Prototype	Fixed	50.0	100.0	Peak	+/- 0.002	20M0W7D 40M0W7D	OFDMA

						80M0W7D 160MW7D	
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Protection against Interference

Charter understands it must accept RF interference from any federal and non-federal incumbent users of this band and that all Charter operations will be on a secondary basis. Charter intends to conduct these experiments indoors at Charter’s Technology and Engineering Center II, and further expects limited RF propagation distances as well as limited and localized aggregative contribution to the RF noise floor.

Contact Information

Point of contact for FCC licensing issues:

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Point of contact for questions about testing operations:

Yujia Zhou
 Principal Engineer I
 (720) 532-7746
 Richard.Zhou@charter.com

The following individual will be available 24/7 during all testing and has authority and ability to immediately cease all operations:

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 Principal Engineer I
 (720) 532-7746
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