REDACTED—PUBLIC VERSION

Description of Proposed Experimental Operations

Pursuant to Sections 5.3(j) and 5.54(a)(1) of the Federal Communications Commission's ("Commission's) rules, 47 C.F.R. §§ 5.3(j) and 5.54(a)(2), Comcast CBRS, LLC ("Comcast"), an indirect subsidiary of Comcast Cable Communications, LLC, requests authorization to conduct experimental operations under a special temporary authorization ("STA") issued by the Commission for a term of six months commencing on September 14, 2020.

Comcast seeks authorization to conduct pre-commercial outdoor field trials in the 3700–3800 MHz, a subset of the recently expanded flexible use C-Band available to mobile and fixed operations in the ranges of 3.7 to 3.98 GHz, which the Commission intends to auction at the end of the year. The proposed field test will evaluate coverage, throughput, and mobility of equipment and facilities that operate in the C-Band to obtain data and advance the company's understanding of the full potential of technology and equipment operational in this band.

Summary of Proposed Field Tests

As described in more detail below, Comcast will be testing on traditional mobile handsets that will send and receive signals via **[[BEGIN CONFIDENTIAL]]** [redacted] **[[END CONFIDENTIAL]]**. Testing will be conducted Monday through Friday from 9 AM to 5 PM, using only Comcast's approved employees and vendors.

Measures to Ensure Continuity of Incumbent Operations

To ensure the planned field testing does not unduly interfere with incumbent operations, Comcast will utilize accepted mitigation practices and protocols. For example, with respect to incumbent FSS earth stations, Comcast will continue its existing practice of implementing agreements with registered FSS operations which ensure that Comcast's field tests present no harmful interference to such incumbent operations. Comcast has successfully used this process in the past. Should any registered users raise any concerns, Comcast will work to address such concerns and mitigate any issues raised by such users. Further, Comcast will avoid causing harmful interference to existing incumbent FSS earth stations in the band.

Location of Testing

Comcast will conduct outdoor fixed and mobile testing in a small targeted portion of the area surrounding Philadelphia, Pennsylvania market within its service territory. Specifically, testing will be conducted within a 15 km radius of the following location:

Locality	Latitude	Longitude
Philadelphia, PA	39.9549°N	75.1699°W

Description of Test Bed Framework

The experimental operations will field test transmitters in various configurations that will be deployed within the 15 km radius of the location set forth above. The transmitters will consist of **[[BEGIN CONFIDENTIAL]]** [redacted] **[[END CONFIDENTIAL]]**.

Through the use of mobile test devices and commercial handsets (i.e., "End User Equipment"), Comcast will evaluate propagation characteristics for model verification, data throughput performance, inter-cell interference. Authorization to conduct this testing will also allow Comcast to test and evaluate certain network trial objectives include validating RF design parameters, technical performance and end user experience characterization, and evaluation of operating characteristics under different channel types. All testing will be conducted within **[[BEGIN CONFIDENTIAL]]** [redacted] **[[END CONFIDENTIAL]]**.

Radio Equipment Description

The radio equipment that will be used in the proposed experiment will perform pursuant to the technical characteristics shown below. Each type of the proposed radio equipment has been certified by the Commission pursuant to the equipment authorization rules. Comcast may also use prototype radio equipment with the same or similar technical characteristics as the authorized radio equipment. Comcast will utilize traditional mobile handsets to receive signals from the transmitters in order to evaluate performance of the equipment described above.

Fixed Equipment

Transmitter	Category	Tx Power (W)	EIRP (dBm)	ERP (Watts)	Mean or Peak	Emissions Designator	Frequency Tolerance	Modulation
Type 1[1]	B	200W	2x66 dBm	61	Mean	20M0W7W	0.00000005	256QAM/64 QAM/ 16QAM/QPS K

End User Equipment (3 Types)

Transmitter Type	Category	Tx Power (mW)	EIRP (dBm)	ERP (Watts)	Mean or Peak	Emissions Designator	Frequency Tolerance	Modulation
Mobile smartphone or equivalent	EUD	200	23	0.2	Mean	20M0W7W	0.0000001	64QAM/ 16QAM/QPSK

Protection Against Interference

Pursuant to the Commission's experimental licensing rules,[2] Comcast understands that, for purposes of the experimental operations described in this application, it must accept interference from any incumbent users of the 3700–3800 MHz band and that Comcast's experimental operation will be conducted on a secondary basis.

[1] This transmitter is a directional antenna. The width of the beam at the half-power point is 65.00 degrees. When installed in the testing location described above, three separate antennas will be oriented in the horizontal plane at 0 degrees, 120 degrees, and 240 degrees. All three antennas will be oriented in the vertical plane at 6.80 degrees from horizontal.

[2] *See* 47 C.F.R Part 5.

To ensure prompt resolution of any potential interference events, Comcast will establish a point of contact, available 24/7 during the time when all experiments are conducted. This person will have authority and the ability to disable all transmissions when notified that interference is impacting primary-licensed services. Should interference occur during these testing periods, Comcast will take immediate steps to resolve the interference, including discontinuing operations, or, if appropriate, moving operations to a different channel.

As explained above, Comcast will coordinate with all incumbent operations and will continue its existing practice of implementing agreements with registered FSS operations which ensure that Comcast's field tests present no harmful interference to such incumbent operations. In addition, although Comcast expects this testing will end prior to the winning bidders of Auction 107 commencing operations, Comcast will discontinue operations upon notice by a new licensee that they plan to initiate operations in the relevant area.

Restrictions on Operation

Comcast does not seek authority to perform a commercial market study under the requested experimental license. Comcast will retain control over any prototype equipment utilized in the testing at all times.

Contact Information

FCC licensing issues:
K.C. Halm
Davis Wright Tremaine LLP
Counsel to Comcast CBRS, LLC
202.973.4287
kchalm@dwt.com

Test Bed Operations:
Ronald Phillips
RF Engineer
1800 Arch Street
Philadelphia, PA 19103
Ronald_Phillips@comcast.com
Mobile: 914.954.4771

Field Test Manager (* available at all times for all issues and requests to cease transmissions)
Ronald Phillips
RF Engineer
1800 Arch Street
Philadelphia, PA 19103
Ronald_Phillips@comcast.com
Mobile: 914.954.4771