# Filing Instructions for OET Experimental License

The purpose of this document is to provide the instructions to do the paperwork for the OET (FCC Office of Engineering and Technology's) experimental license and avoid incurring attorney's fees. The process outlined in this document is applicable for the Cambium ePMP 6 GHz product line.

This document assists you in filing for an experimental 6 GHz license. The experimental process can take between thirty (30) and forty-five (45) days. Sometimes, a customer might need to get an FCC lawyer involved for assistance with filing and paperwork.

The process outlined in this document is a three-step process. First, you need to get a FRN number assigned to your organization. The second step is to fill out the experimental license application and send it to the FCC. Finally, you need to provide the exhibits to the FCC when they ask for them.

## STEP 1: Obtain FRN Number

Before you start, you will need a FRN number from the FCC. If you've already filed for licenses before, you should already have one. If you do not, you can apply for one here.

**New Registration**

- Click the "Register" button.



- Choose the appropriate entity.

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- Fill in the registration form as seen in image below and press "Submit."



### Already registered

In this case, the user should have already an FRN. If the user misplaced it, then they can search the FRN database to retrieve the appropriate FRN.

(For Cambium, use 0025123472)

## STEP 2: Submit the Application to the FCC

If you already have an FRN or you have received your FRN, you can start the application process here.
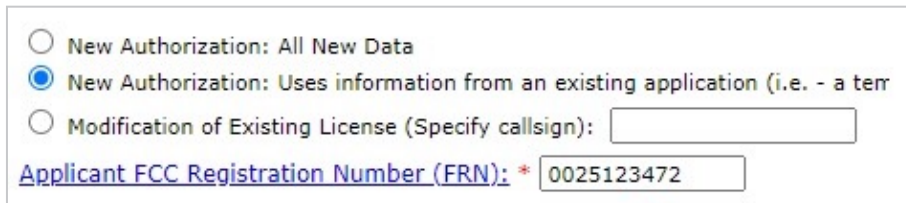
### Start the application process

- Under "Filing Options" in the pane on the lefthand side, you will need to file for a "Form 442 – New License."
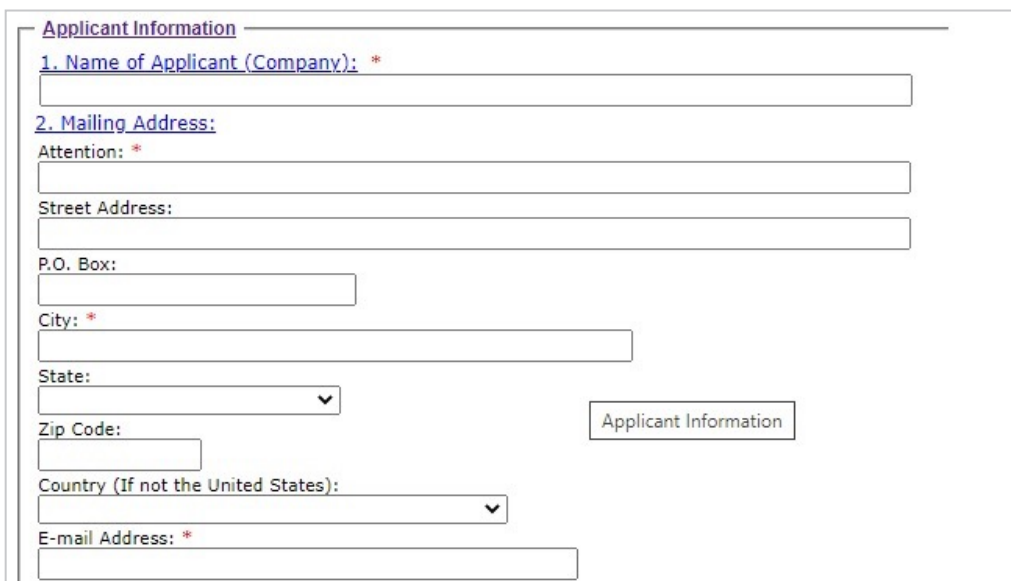
- Choose "Conventional Experimental License."

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- Select the appropriate button for the application purpose:



- Choose "New Authorization: All New Data" if this is your very first 6 GHz filing.

- Choose "New Authorization: Uses information from an existing application" if this is not your first application.

- Enter your FRN number and click "proceed."

- The following page is the actual application. For the applicant information, fill in your company's information.



- Once your fill in your company information, you'll see a "Questions" section. All questions will be answered with "No" except for question 8.

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**The next page asks for information about the Cambium Networks products. You'll need to add the amount of:**

- Access points (AP) and clients that you plan to deploy

- Manufacturer: Cambium Networks

- Model Number: ePMP 4600 or ePMP 4600L or ePMP Force 4600C/4625

- Number of Units: Estimated units you plan to deploy

- Experimental: Yes

- Click "Add More Equipment" and add your client radio information as well

**This information is required to finish the FCC application. It will ask for data on the Cambium Networks equipment during the application process. Here is the required info:**

- ePMP 4600 or ePMP 4600L

- ePMP Force 4600C/ 4625



**In the above image, we have added one ePMP AP 4600 and 10 ePMP Force 4625 radios. The next page has a list of additional questions to answer.**

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**Questions Continued...**

**11.** *Is the equipment listed in Item 10 capable of station identification pursuant to Section 5.115? ○ Yes ○ No

**12.** *Applicant is:
○ Individual ○ Association ○ Partnership ○ Corporation ○ Other
If "OTHER" is selected, include as an exhibit a narrative statement describing the type of applicant.

**13.** *Is applicant a fore    government or a representative of a foreign government? ○ Yes ○ No

**14.** *
Has applicant or any par    to this application had any FCC station license or permit revoked or any
application for permit, lie    se or renewal denied by this Commission?
If "YES", include as an e:    bit a statement giving call sign of license or permit revoked and relate circumstances. ○ Yes ○ No

**15.** *Will applicant be o    er and operator of the station? ○ Yes ○ No

**16.** Give the following in    mation of person who can be[Questions Continued...]hing to this application:
Last Name: *
First Name: *
Title: *
Phone Number (including    rea code): *
E-mail Address: *

**17.** *APPLICANT ANTI-[    JG ABUSE CERTIFICATION:
By checking "YES", the in    vidual applicant certifies that he or she is eligible for this license. This requires that he or she is not subject
to a denial of federal ber    ts, including FCC benefits, as a result of a drug offense conviction pursuant to Section 5301 of the
Anti-Drug Abuse Act of 1    8, 21 U.S.C 862. A non-individual applicant, eg., corporation. partnership or other unincorporated association,
certifies that no party to    e application is subject to a denial of federal benefits, pursuant to that section.
For definition of a "party    or these purposes, see 47CFR 1.2002(b).
○ Yes ○ No

**For the above form:**

- Question 11: answer "No"

- Question 12: answer "Other"

- Question13: answer "No"

- Question 14: answer "No" (please check)

- Question 15: answer "Yes"

- Question 16: the person filling out the application should enter their information

- Question 17: the answer is hopefully "Yes"

- Question 18: enter your signature and title stating that all this information is true

- Once you're done, submit the information.

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## STEP 3: Submit the exhibits

During the application process, there were a couple of questions that asked for you to provide additional information. These are called exhibits and you will need those attached or ready to send when you are contacted for them. Please see the following for examples of what you'll need for. Highlighted portions will need to be filled in.

- Company Name
- FRN #
- Form 442
- Month, Year

## Exhibit A  (Example – Description of Experimental Program)

**Exhibit A noted in Step 2 require information on the following:**

A.  The complete program of research and experimentation proposed including description of equipment and theory of operation.

B.  The specific objectives sought to be accomplished.

C.  How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along line not already investigated.

**Please see the below example:**

Description of Experimental Program

In last year's 6 GHz Report & Order, the Commission designated additional spectrum for unlicensed operations, envisioning its use for "new innovative technologies and services that will advance the Commission's goal of making broadband connectivity available to all Americans, especially those in rural and underserved areas." Unlicensed Use of the 6 GHz Band, 35 FCC Rcd 3852, 3853 (2020). Through this application for an experimental license, *Full Company Name* seeks to advance these goals by testing available equipment across the UNII-5 band for potential delivery of enhanced fixed wireless broadband services.

The experimental operations will involve field deployment and testing of Cambium Networks 6 GHz radio technology on ## towers at rural sites in Location. These operations will evaluate the greater throughput capabilities available in these bands using 80/160 MHz channels. The program will also use up to ## remote units at customer locations.

*Company Name's* data collection program will operate without causing harmful interference to incumbent users. Company Name will work with any nearby licensed incumbents that it identifies, based on information provided in the FCC's databases, to ensure that its operations will avoid any harmful impact on such existing users.

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## Exhibit B (Example – Deployment Parameters)

Exhibit B requires technical information on the sites as to where they are deployed and RF characteristics of the equipment deployed, etc.

Please see the below details for instructions:

Deployment Parameters

(This is just one site – this might need to be repeated for all the sites)

The current stage of the experimental trial proposes operation from two sites. Each location will deploy directional antennas which will transmit on the 5925–7125 MHz band. Radio will be locked to operate only in UNII-5 (5.925–6.425 GHz) and UNII-7 (6.525–6.875 GHz)

**Specific parameters of proposed operation are detailed in the below:**

- Location address
- Coordinates GPS coordinates of tower
- Beam width in degrees at half point
- Beam tilt installed antenna tilt
- Orientation details (maybe in vertical plane (degrees from horizonal) or in horizontal plane center of each antenna in degrees
- Overall height above ground
- Elevation of ground at antenna site
- Distance to nearest aircraft landing
- List of any natural information of existing man-made structures (hills, towers, water tanks, etc.)

**Additional information required:**

- Frequency range (this should be "5925–7125 MHz")
  Radio will be locked to operate only in UNII-5 (5.925–6.425 GHz) and UNII-7 (6.525–6.875 GHz)
- Station class (Set this to "FX")
- Maximum EiRP 4.0W
- Mean peak (set this to "P")
- Frequency tolerance

**Set this to the following depending on the hardware being used:**

- » ePMP Force 4625        "960 Hz"
- » ePMP Force 4600C    "1152 Hz"
- » ePMP  4600L            "1152 Hz"
- » ePMP 4600                "1152 Hz"

- Emission designator
  - » First Symbol "D" for carrier is amplitude and angle modulated either simultaneously or in a pre-established sequence
  - » Second Symbol "7" for Two or more channels containing quantized or digital information
  - » Third Symbol "D" for Data transmission, telemetry, telecommand

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## Exhibit B (continued)

Most likely, the 160 MHz bandwidth is used. However, the installer can change it, so set this to the following depending on the hardware being used:

- » 20 MHz BW "20M0D7D"
- » 40 MHz BW "40M0D7D"
- » 80 MHz BW "80M0D7D"
- » 160 MHz BW "160M0D7D"
- Modulating signal (set this to "OFDM")

Additionally, the trial will deploy up to ### end users located with a #-mile radius of the fixed locations, with a maximum EiRP 4.0W. (You need to add additional boxes with info above for each tower you are applying for in the application.)

## FAQS

**Q: Is the 4W specification refers to ERP or EiRP**

A: It is EiRP

**Q: What is the antenna gain**

A: For Sectored Antenna which is present on the epmp 4600 access point it is 18 dbi. For the subscriber modules the Dish Antenna gain is 25 dBi

**Q: What is the Bandwidth**

A: This is a configurable field, the maximum bandwidth supported for 6 GHz is 160 MHz

**Q: What is the modulating signal**

A: It is OFDM

**Q: Are Bands unii-6 and unii-8 removed?**

A: Radios shipped with firmware 5.2 or later will have these bands removed, however bands are configurable fields so operator can select the band that he/she would like to operate in.

**ABOUT CAMBIUM NETWORKS**

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.

**cambiumnetworks.com**

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